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Yizhar Hirschfeld

THE ROMAN BATHS OF HAMMAT GADER

FINAL REPORT

WITH CONTRIBUTIONS BY

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Published by
THE ISRAEL EXPLORATION SOCIETY

DS
110
.H288H 53
1997

PUBLISHED WITH THE GENEROUS SUPPORT
OF THE DOROT FOUNDATION, USA

אוניברסיטת חיפה
הספריה

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© 1997 by the Israel Exploration Society
ISBN 965-221-0358

Editor – Yizhar Hirschfeld
Copy editor – Robert Amoils
Translations – Ḥani Davis
Typesetting – Marzel A.S. - Jerusalem
Design – Avraham Pladot

Printed in Israel
Old City Press, Jerusalem
1997

HAMMAT GADER EXCAVATIONS

1979-1982

directed by

Yizhar Hirschfeld and Giora Solar

under the auspices of

The Israel Exploration Society

The Israel Antiquities Authority

The Institute of Archaeology, Hebrew University of Jerusalem

in cooperation with

The Israel Government Tourism Corporation

Dedicated to my grandparents,
Gisela and Sigmund Hirschfeld,
whose kind generosity enabled
the publication of this report.

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FOREWORD AND ACKNOWLEDGMENTS

The following report is a description of the Roman baths uncovered at Hammat Gader. The baths and the therapeutic properties of their waters had gained renown already in antiquity. Chroniclers who visited the site often praised its beauty, size, and remedial powers. Indeed, the results of the excavations at the site have been far from disappointing. In addition to the impressive architectural remains, dozens of inscriptions engraved in marble were discovered, as well as a rich assemblage of small finds, such as coins, oil lamps, pottery and glass vessels, marble statues, frescoes, glass mosaics, etc. At the conclusion of the excavations, a rich and diversified picture was obtained, reflecting the splendor of the site in antiquity.

The Roman baths of Hammat Gader were excavated over a four-year period (1979-1982), in the course of which an area of over 5,000 m^2 was exposed. The years following the excavations saw the publication of preliminary articles and reports on the findings (Hirschfeld and Solar 1981, 1982) as well as several of the inscriptions revealed at the site (Green and Tsafrir 1982; Di Segni and Hirschfeld 1986; Di Segni 1992). The present work is the complete and final scientific report.

The report contains sixteen chapters, including the Introduction and the Summary and Conclusions, each of which contains figures and a bibliography. A geological appendix concludes the volume.

The Introduction presents the geographical-historical background of Hammat Gader and its baths as well as the chronology of the site. The discussion of the chronology appears early on in the report as it is based on the results of the excavation and is essential to our understanding of the description of the architectural remains.

Chapter 1, which is devoted to the architecture, is the main, and longest, one. It is composed of four subsections: Building Methods and Materials; Water Supply Systems; Description of the Architectural Remains; and Proposed Reconstruction of the Baths Complex and Its Functions. The description of the architectural remains, which incorporates stratigraphic data dating various parts of the structure, is presented in the chronological order of the strata, from early (i.e., Roman period) to late (i.e., Arab period).

Chapter 2, by Hannah Hirschfeld, is devoted to one of the unique components of the structure – the columned portal. This portal, most of the elements of which were exposed during the excavation, has been reconstructed and stands as a symbol of the glory and splendor that characterized the Roman baths. The columned portal should actually have been included within the chapter on architecture; however, because of its complexity and the richness of its ornamentation, we found it appropriate to allocate it a chapter of its own.

The remaining chapters of the report deal with the various finds. Chapter 3, by Leah Di Segni, presents the impressive collection of Greek inscriptions found at the site. A total of 72 dedicatory inscriptions were discovered. The complete inscriptions, revealed *in situ* on the marble floors of the structure, shed light on the baths complex and its history. It is clear, however, that their historical contribution goes far beyond the topics treated in this report.

Chapter 4, by Nitzan Amitai-Preiss, is basically a continuation of the previous chapter, treating a small number of inscriptions and engravings (including games) in Arabic from the latest phases of the site's occupation. Chapters 5 and 6 are devoted to the numismatic finds. A total of ca. 3,000 coins were discovered, most of them in a relatively poor state of preservation. Only ten percent are legible and permit numismatic analysis. Chapter 5, by Rachel Barkay, presents the coins of the Roman-Byzantine period, and Chapter 6, by Nitzan Amitai-Preiss and Ariel Berman, the coins of the Arab period. The numismatic evidence is invaluable for dating the baths' various phases of occupation.

Chapter 7, by Tania Coen Uzzielli, describes the oil lamps found in the excavations – a total of ca. 150 intact lamps and hundreds of fragments. Chapter 8, by Roni Ben-Arieh, discusses the

pottery of the Roman-Byzantine and Umayyad periods, while Chapter 9, by Adrian Boas, deals with the late pottery of the Abbasid-Fatimid period (9th-11th centuries) and the Middle Ages. The assemblage of glass vessels is rich and, in large part, well preserved. Chapter 10, by Einat Cohen, discusses the glass vessels from the Roman-Byzantine and Umayyad periods; Chapter 11, by Ayala Lester, treats the glass vessels of the late periods.

The next two chapters deal with the various finds connected with the ornamentation of the baths complex. Chapter 12, by Tania Coen Uzzielli, discusses the marble decoration and the glass mosaics; it includes various other finds, such as bone and metal tools, and several pieces of gold jewelry. Chapter 13, by Roni Ben-Arieh, describes the partial remains of three marble statues found in the excavations.

Chapter 14, by Estée Dvorjetski, discusses the general phenomenon of spas in the ancient world; the importance attributed to this institution may explain the attractiveness of the Hammat Gader baths, and against this background we gain a better understanding of the various finds uncovered at the site. The concluding chapter summarizes the novel finds and the conclusions drawn in light of the excavations, as well as the broader implications to be derived from them regarding the site in the various historical periods.

The excavations, which were conducted and supervised by the authors of this volume on behalf of the Israel Antiquities Authority (formerly the Israel Department of Antiquities and Museums), the Institute of Archaeology of the Hebrew University of Jerusalem, and the Israel Exploration Society, were made possible through the cooperation of a large and dedicated staff. The various area supervisors were (in alphabetical order): Dina Arbeli, Daphna Bos, Hayyim Goldfuss, Mahmud Hawari, Hannah Hirschfeld, Tammy Miller (Shadmi), Tessa Mindel, Osnat Misch, Yossi Patrich, Joya Perugia, and David Tarler; the volunteers who joined the excavations came from all parts of the globe. Photographs were taken by Zeev Radovan, and measurements by Giora Solar, Bianca Lepori, Erez Cohen, and David Houly. Sketches were drawn by those mentioned above, as well as Tanya Gorenstein and Leen Ritmeyer. Nili and Abraham Greitzer examined the many mason marks found at the site.

The finds were preserved and restored by the staff of the Antiquities Authority. Much dedicated work was invested, especially by Moshe Hoffman who reconstructed the many marble inscriptions found at the site. Yigal (Carlos) Val meticulously cleaned the coins, clay lamps, and other small finds. This report is dedicated to the memory of these two artisans and their notable work in enhancing the beauty of archaeological artifacts.

Supervising the excavation of a site as large as Hammat Gader is a great privilege. We would like to thank the director of the Antiquities Authority at the time, Avi Eitan, as well as its current director, Amir Drori, who made the project possible and encouraged us all throughout our work for close to fifteen years. Our heartfelt thanks are also extended to Joseph Aviram, director of the Institute of Archaeology of the Hebrew University at the time and presently director of the Israel Exploration Society, who supported and assisted us in every possible way in organizing and supervising the digs. The initiative to conduct the excavations and the funding came from the Israel Government Tourism Corporation. We would like to express our gratitude to the former directors general of the corporation, 'Adi Niv, Avi Brook, Amos Lothan, and Ephraim Ronen, who recognized the importance of this project, as well as to its dedicated employees, Shim'on Moneta, Yossi Saltz, and Nira Peretz, who accompanied us through its various stages.

In the course of the excavations we received the helpful cooperation of the site's director at the time, Shelomi Ranot, and of the head of the Jordan Valley Regional Council, Yonah Rosen. We are indebted to both of them.

The report was completed under the auspices of the Israel Exploration Society. Hani Davis translated parts of the report and proofread the entire volume, Robert Amoils edited the manuscript, the typesetting was executed by Marzel A.S. – Jerusalem, and Avraham Pladot created the aesthetic graphic design.

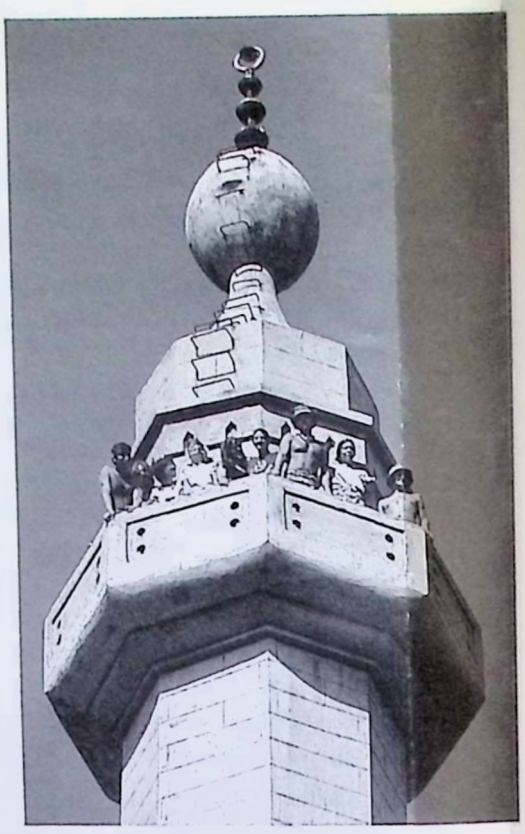
Editor's Note:
True north is 30° east of north in our descriptions.

ABBREVIATIONS

ADAJ	*Annual of the Department of Antiquities of Jordan.*
AJA	*American Journal of Archaeology.*
BASOR	*Bulletin of the American Schools of Oriental Research.*
BHM	*Bulletin of the History of Medicine.*
BJ	*Bonner Jahrbücher.*
CCSL	*Corpus Christianorum, Series Latina.* Turnhout.
CIL	*Corpus Inscriptionum Latinarum.* Berlin.
CJ	*Corpus Iuris Civilis* II: *Codex Iustinianus.* P. Krueger ed. Berlin 1954.
CMG	*Corpus Medicorum Graecorum.*
CSHB	*Corpus Scriptorum Historiae Byzantinae.* Bonn.
CTh	Codex Theodosianus. Th. Mommsen and P.M. Meyer eds. Berlin 1954.
Dig.	*Corpus Iuris Civilis* I. *Digesta.* Th. Mommsen and P. Krueger eds. Berlin 1954.
DOP	*Dumbarton Oaks Papers.*
EH	*Encyclopedia Hebraica*, Vols. I-XXXII, Jerusalem-Tel Aviv 1960-1981 (Hebrew).
EI	*Eretz-Israel. Archaeological, Historical and Geographical Studies.* Jerusalem.
ESI	*Excavations and Surveys in Israel.*
GCS	*Die griechischen Christlichen Schriftsteller der ersten Jahrhunderte, herausgegeben von der Kirchenväter Kommission der königl. Preussischen Akademie der Wissenschaften.* Leipzig.
IEJ	*Israel Exploration Journal.*
INJ	*Israel Numismatic Journal.*
Instit.	*Corpus Iuris Civilis* I. *Institutiones.* P. Krueger ed. Berlin 1954.
JEA	*Journal of Egyptian Archaeology.*
JGS	*Journal of Glass Studies.*
JNES	*Journal of Near Eastern Studies.*
JPOS	*Journal of the Palestine Oriental Society.*
JQR	*Jewish Quarterly Review.*
JRA	*Journal of Roman Archaeology.*
JRS	*Journal of Roman Studies.*
LA	*Liber Annuus.*
LCL	*Loeb Classical Library.*
MGH	*Monumenta Germaniae Historica.*
MHS	*Medical History, Supplement.*
Nov.	*Corpus Iuris Civilis* III. *Novellae.* R. Schoell and G. Kroll eds. Berlin 1954.
OCD	*Oxford Classical Dictionary.*
Opus Arch	*Opuscula Archaeologica.*
PBSR	*Papers of the British School at Rome.*
PEFQSt	*Palestine Exploration Fund Quarterly Statement.*
PEQ	*Palestine Exploration Quarterly.*
PG	*Patrologia Graeca*, J.P. Migne ed. Paris.
PL	*Patrologia Latina*, J.P. Migne ed. Paris.
PNessana	H. Dunscombe Colt ed., *Excavations at Nessana* III. C.J. Craemer, *Non-Literary Papyri.* Colt Archaeological Institute. Princeton 1958.
PO	*Patrologia Orientalis.* Paris, Turnhout.
PWRE	*Paulys Realencyclopädie der classischen Altertumswissenschaft. Neue Bearbeitung begonnen von Georg Wissowa.* Stuttgart 1893-.
QDAP	*Quarterly of the Department of Antiquities of Palestine.*
RB	*Revue Biblique.*
Reeg 1989	*Die Ortsnamen Israels nach der rabbinischen Literatur.* Wiesbaden.
REG	*Revue des Etudes Grecques.*
SB	F. Preisigke et al., *Sammelbuch griechischer Urkunden am Ägypten.* Strassburg, Berlin-Leipzig, Heidelberg, Wiesbaden 1915.
SEG	*Supplementum Epigraphicum Graecum.* Leiden.
SEG 1990	H. Roozenbeek. *Supplementum Epigraphicum Graecum. Consolidated Index for Volumes XXVI-XXXV (1976-1985).* Amsterdam.
ZDPV	*Zeitschrift der deutschen Palästina Vereins.*
ZPE	*Zeitschrift für Papyrologie und Epigraphik.*



Volunteers of the first season of excavations, 1979.



Staff members on the minaret of the mosque near the site.



Uncovering the first Corinthian capital of the columned portal.



Staff members of the fifth season of excavations, 1981. From left: Yizhar Hirschfeld, Mahmud Hawari, Erez Cohen, Haim Goldfuss, Giora Solar; below: Hannah Hirschfeld, Tamar Muller, Dina Arbeli.



Yoram Tsafrir reads Inscription No. 1. To his left: Giora Solar.

INTRODUCTION

Gadara, a place which has warm baths in Syria, inferior only to those at Baia in Italy, with which no other baths can be compared.

(Eunapius, late fourth century)

GEOGRAPHICAL LOCATION

Hammat Gader (el-Hammeh, coord. 750 619) lies in a small valley on the banks of the Yarmuk River which cuts its course through the Golan Heights and the Gilead mountain range. Situated on the international boundary along the Yarmuk River, Hammat Gader separates the State of Israel from Jordan. Access to the site is from the west, on the road linking Hammat Gader with Tiberias and Beth Shean (Fig. 1).

The distance between Hammat Gader and the Sea of Galilee is not great, ca. 7 km as the crow flies; however, its location between mountain ranges on either side of the Yarmuk River – the Golan Heights on one side and the Gilead on the other – isolates it from the Jordan Valley. The valley from which the Hammat Gader springs issue (see below) stretches north of the Yarmuk River. It is 1,450 m long and ca. 500 m wide, and its entire area does not exceed 725,000 m^2 (72.5 hectares). The valley lies ca. 143 m below sea level, while the mountain ranges surrounding it rise to an altitude of ca. 300 m above sea level (Sukenik 1935:103-104). These differences in elevation give rise to a unique closed space surrounded on all sides by slopes and fairly steep mountains (Fig. 2).

The area of Hammat Gader is almost completely level, except for two hills in the western half of the valley. The eastern hill rises 20 m above the level surface. On the eastern slope of this hill the remains of a Roman theater were found. On the summit of the western hill, Tell Bani in Arabic, i.e., "mound of baths," which is ca. 25 m high, are the remains of a synagogue from the Byzantine period.

Hammat Gader is flanked on three sides (east, south, and west) by the Yarmuk River. This is the principal river in the area, into which drains the runoff from the eastern Hauran and southern Golan Heights. During most of the year the river is ca. 18 m wide and has an average depth of 1.8 m;

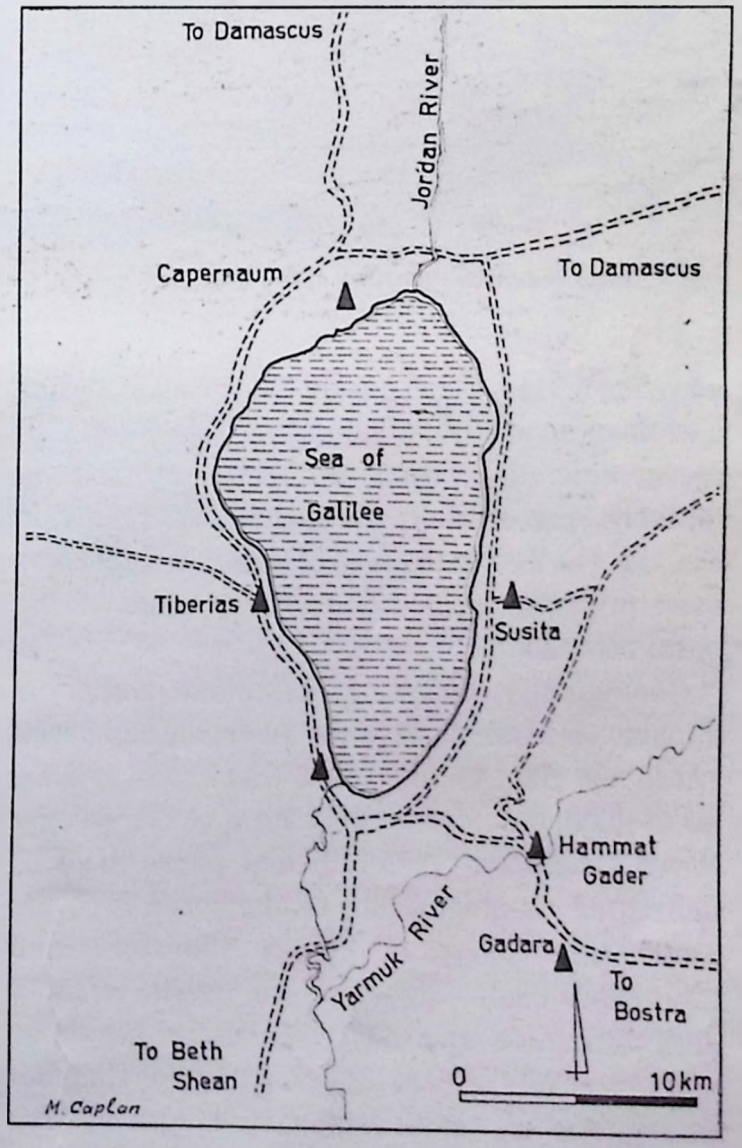


Fig. 1. Map of area around Hammat Gader.



Fig. 2. General view of the site of Hammat Gader, looking east.

however, when in flood during the spring, it attains a width of up to 80 m (Schumacher 1888:37-41). In recent times the Yarmuk River was crossed via fords, i.e., places where the channel was relatively shallow. The ford in the area of Hammat Gader was most probably located somewhere south of the baths complex.

Geologically speaking, Hammat Gader is situated on a contact between limestone and basalt (Arad and Bein 1986:52). The basalt, which is ca. 40 m thick, outcrops on both sides of the Yarmuk River (Michelson 1993:118) and forms the cliff delimiting Hammat Gader on the north. It covers alternating layers of chalky limestone and bituminous chalk, which, in turn, overlie strata of hard limestone and dolomite. There are large deposits of tufa around the hot springs of Hammat Gader. As we shall see below, during the construction of the Hammat Gader baths in the Roman period extensive use was made of the different types of local stone (see geological appendix by Naomi Porat).

The area of Hammat Gader is blessed with no less than five springs, three of which are thermal (Starinsky, Katz and Levitte 1979). The southernmost and hottest spring is 'Ain el-Maqleh, also called Hammet Selim (Fig. 3). Its water attains a temperature of 51°C and is rich in minerals. Around this spring the spa was built in the Roman period. About 150 m eastward lies the spring of 'Ain er-Rih, whose water reaches a temperature of 34°C. Two additional springs run one next to the other in the northwestern part of the valley. One is 'Ain el-Jarab with a water temperature of 42°C, and the other is 'Ain Bulos whose water is fairly chilly, 25°C. The fifth spring, whose water temperature is relatively low, is 'Ain Sa'ad el-Far, also called 'Ain Sakhneh. It flows in the northeastern part of the

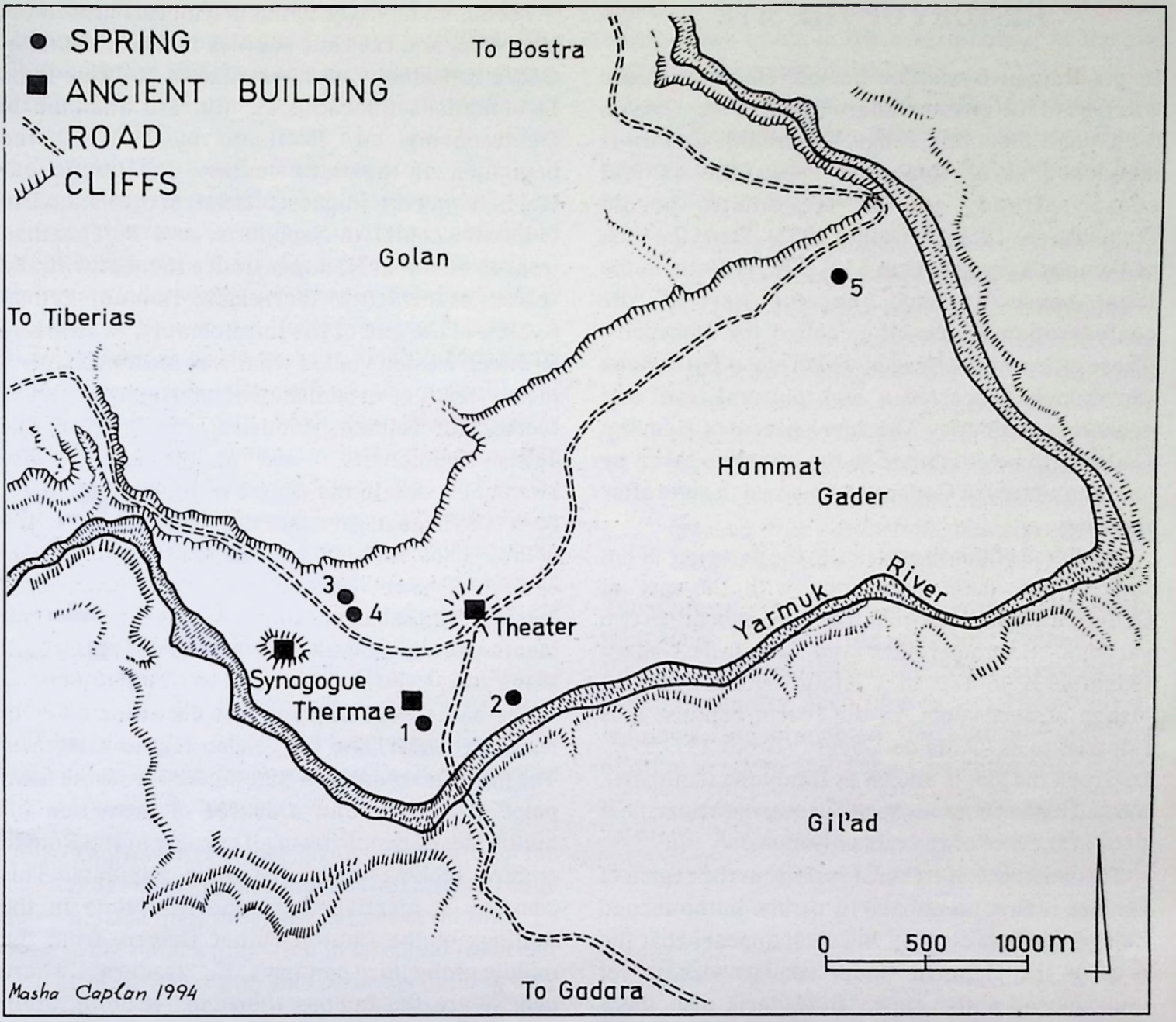


Fig. 3. Plan of Hammat Gader and its springs. 1. 'Ain el-Maqleh; 2. 'Ain er-Rih; 3. 'Ain el-Jarab; 4. 'Ain Bulos; 5. 'Ain Sa'ad el-Far.

Hammat Gader valley and has a water temperature of 28°C.

The springs of Hammat Gader, which differ from each other in temperature and mineral content, remain the attractive features of the site. According to Nelson Glueck, who visited the site in the 1940s, these are the most beautiful springs in the Middle East (Glueck 1946:48). Around the springs grew rich subtropical vegetation, affording the valley of Hammat Gader its beauty and uniqueness.

Today, Hammat Gader is a peripheral, relatively remote locality. This, however, was not the case in antiquity: an important thoroughfare ran through the area, connecting Tiberias with Gadara, the mother-city of Hammat Gader. It appears on the famous Roman road map, the Peutinger Table, as a main transversal artery linking the major settlements of Provincia Palaestina with Bostra, the capital of Provincia Arabia (Bowersock 1983: 176-177). This road, connecting Tiberias – via Hammat Gader – with Gadara, was paved in the days of Marcus Aurelius (Abel 1903:230; MacAdam 1986:20-27). The location of Hammat Gader along this route gave the site its renowned status as a spa, attracting many people throughout the Empire who sought cures for various ailments.

HISTORY OF THE SITE

In the Roman-Byzantine period, Hammat Gader was part of the city of Gadara (today, Umm Qeis on the Gilead mountain range in Jordan). Gadara is mentioned as an important urban and cultural center already in the Hellenistic period (Tcherikover 1959:89; Geiger 1985). From the time of Pompey's conquests in 63 B.C.E., Gadara, in the legal sense at least, became part of the confederation of ten cities called the Decapolis. These cities, at the head of which stood Beth Shean (Scythopolis), boasted a high cultural level and economic prosperity. The development of Hammat Gader is to be attributed to the initiative taken by the inhabitants of Gadara who named the site after their city.

The name of the site attests to the presence of hot springs and their association with the city of Gadara. In Jewish sources the name appears in two variants: "Hammat Gader" and "Hamta de-Gader" (Klein 1939:45-47). In a letter written by Cyril, bishop of Jerusalem, in the fourth century, it is referred to as "'Aina de-Gader" (Brock 1977:276). In Greek the site is known as Emmatha (εμμάθα), although most sources speak of *thermae* near, next to or at the foot of the city of Gadara.

The existence of mineral springs in the region of Gadara is first mentioned by Strabo in the second half of the first century B.C.E. It appears that the area of the Hammat Gader springs was as yet undeveloped at that time: "In Gadaris, also, there is noxious lake water, and when animals taste it they lose hair, hoofs and horns" (*Geog.* 16:45; p. 297). From Josephus' silence, it may be inferred that in his lifetime the people of Gadara had not yet begun the massive foundation work necessary for developing the spa. Construction at the site apparently began only in the second century C.E. This period was the Golden Age of the cities of the Decapolis, among them, Gadara. The earliest source relating to Hammat Gader as a settlement is a homily in Ecclesiastes Rabbah, attributed to the days of R. Meir (mid-second century C.E.). In this homily, Hammat Gader is described as a place to which "the crowds bring foodstuffs to buy and sell" (Ecclesiastes Rabbah 5:10); in this context another source mentions an annual fair that was held there.

The talmudic sages living in Tiberias visited the site often, and rabbinic sources mention Hammat Gader repeatedly after the time of R. Meir (e.g., Lamentations Rabbah 1:45; Midrash Tannaim to Deuteronomy, ed. Hoffman, p. 262). At the beginning of the third century, R. Hanina bar Hama, *av bet din* (highest official) of the Sanhedrin (supreme court) in Sepphoris, and R. Jonathan went to an inn at Hammat Gader to meet with the "elders of the South" (Jerusalem Talmud, 'Eruvin 6, 23c); at the end of the third century, R. Ami and R. Judah Nesiah visited what was most probably a money-lending establishment at Hammat Gader (Jerusalem Talmud, 'Avodah Zarah 5, 45b). The Jewish community living at the site is also mentioned, and in the course of time its members built a synagogue on the site's western hill (see below). Thus, rabbinic texts depict Hammat Gader as a resort spot containing shops, inns, houses, etc.; however, these same sources make no explicit mention of the monumental complex of baths built at the site.

The baths were no doubt the crowning glory of Hammat Gader, and the reason for its existence. The gigantic complex of bathing halls was the focal point of the site and a source of attraction for multitudes of people from all corners of the Roman empire seeking cures for their ailments. This complex is mentioned for the first time in the writings of the Church Father Origen, from the middle of the third century C.E.: "Gadara ... where nearby are the famous *thermae*" (*Comm. John* 6:24). We thus know that at that time the baths were already in use and therefore the structure must have been built at the beginning of the same century or even earlier, in the second century C.E. In fact, it became clear in the course of our excavations that construction of the baths complex commenced in the second century C.E. This is corroborated by the dedicatory inscription of Empress Eudocia discovered at the site (Inscription no. 49), which mentions the name of the Roman Emperor Antoninus Pius (138-161 C.E.). The foundations were probably laid during his reign, and it is possible that the people of Gadara may even have received some financial aid from him to complete the project.

Many sources dealing with the structure itself

note that, from its inception, the baths complex at Hammat Gader attracted many visitors. The Church Father Eusebius also mentions the Hammat Gader baths in the early fourth century: "And there is another village, Emmatha, near Gadara, where there are *thermae*" (*Onomasticon* 22:26). It appears that the complex had already attained its acme at this time, for at the end of that century the Greek biographer Eunapius wrote that the baths of Hammat Gader were surpassed in their beauty only by those of Baia in the Bay of Naples: "Gadara, a place which has warm baths in Syria, inferior only to those at Baia in Italy with which no other baths can be compared" (*Vit. Soph.* 368). The translator and editor of the Loeb Classical Library edition adds the commentary about the baths of Baia by Horatio, a contemporary of Augustus: "No place on earth is greater in beauty than Baia" (ibid., 369). Thus, it appears that Eunapius' statement refers to the beauty of the Hammat Gader baths and not necessarily to their size or quality.

Eunapius arrived at Hammat Gader from Athens together with the Greek philosopher Iamblichus and his disciples. His descriptions of the life of Iamblichus convey the mysterious pagan ambience that pervaded the place:

> There were two hot springs smaller than the others but prettier, and he [Iamblichus] bade his disciples to ask the natives of the place by what names they used to be called in former times. When they had done his bidding they said: "There is no pretense about it, this spring is called Eros, and the name of the one next to it is Anteros." He at once touched the water with his hand – he happened to be sitting on the ledge of the spring where the overflow runs off – and uttering a brief summons he called forth a boy [Eros] from the depth of the spring. (*Vit. Soph.* 369-371)

It is possible that this excerpt is strictly literary, as Geiger (1986) has suggested; however, since Eunapius actually visited the site of Hammat Gader, his descriptions most probably relate to the springs themselves. The spring called "Eros" in this instance may be identified with the hot spring of 'Ain el-Maqleh, around which the baths complex was constructed, and the one known as "Anteros" should probably be identified with 'Ain Sa'ad el-Far, which flows in the northeastern corner of the site and fed cold water to the baths.

Epiphanius, bishop of Salamis and a contemporary of Eunapius, also describes Hammat Gader and its baths, offering a picture of the colorful atmosphere at the spa:

> A festive gathering took place there annually. For several days people from all over came to bathe and wash away their afflictions ... here men and women bathe together. By chance an unattached women of exceptional beauty came to bathe. Because of the libertine customs [prevalent there], a young man (the son of the head of the Sanhedrin in Tiberias) fell under her spell and as he crossed the *caldarium* his side brushed against her side .... (*Panarion* 30:75)

The most interesting literary reference appears in the diary kept by the pilgrim Antoninus of Placentia, who visited the site in the second half of the sixth century. According to him, the people of Hammat Gader adopted the biblical traditions relating to Elijah and named the baths after him:

> ... three miles from the city [Gadara], there are hot springs called the Baths of Elijah (*thermae Heliae*). Lepers are cleansed there and have their meals from the inn there at public expense. The baths fill in the evening. (*Itinerarium* 7)

We may thus assume that in the days of Antoninus there was already a tradition of medically treating lepers at the hot springs of Hammat Gader. The name *thermae Heliae* may be linked to the biblical tradition regarding the healing of Na'aman, commander of the Aramean army, in the waters of the Jordan River (II Kings 5). The story of the cure from leprosy is indeed associated with Elisha, but it appears that the people of Hammat Gader preferred to name their baths after his more famous teacher, Elijah.

Antoninus goes on to describe in detail the bathing procedure undergone by lepers who wished to be cured:

> In front of the basin (*ante clibanum*) is a large tank. When it is full, all the gates are

> closed, and they are sent in through a small door with lights and incense and sit in the tank all night. They fall asleep, and the person who is going to be cured sees a vision. When he has told it, the springs do not flow for a week. (*Itinerarium* 7)

This passage, which is the most accurate literary description of certain parts of the baths complex provided by someone who visited the site, presents us with the challenge of trying to identify the parts mentioned in it. The hall containing the bathtub in which the lepers received incubatory treatment (an accepted method of treatment in those days) was located opposite the hot spring, and all its entrances could be locked. Below, we will try to identify its possible location on the basis of the excavation's findings.

According to the sources at hand, Hammat Gader was viewed as an international spa to which people from all over the empire thronged in order to be cured of their diseases. For them, and for all visitors to the site, a public hospice was built which offered therapeutic services as well as entertainment.

It is not clear what fate befell the baths at the end of the Byzantine period. However, it seems that the place was struck by one of the earthquakes that occurred in the region. The resulting damage caused to the baths is attested in the "Mu'awiya inscription" (no. 54) discovered at the site. This inscription, which has been dated accurately to the year 662 C.E., notes extensive renovation activity carried out in the baths complex by the first Umayyad caliph, from Damascus.

From the results of our excavations, it appears that the Umayyad period was the baths' last phase of utilization. In the year 749, a severe earthquake known as "the seventh quake" (Amiran, Arieh and Turcotte 1994:266-267) destroyed entire cities on both sides of the Jordan Valley, including the baths complex at Hammat Gader, thereby terminating its use as a built complex.

Islamic sources from the tenth century already refer to the site in the past tense. Thus writes the Arab geographer, al-Muqaddasi:

> The people of Tiberias say that the waters [of Hammat Gader] were, in the past, surrounded by buildings, each one of which was devoted to treating a different illness. (Le Strange 1890:335-336)

Nevertheless, the hot springs did not cease to attract bathers to the site, as is attested by sources from the Middle Ages. Yaqut and Damasqi, from the twelfth and thirteenth centuries, report on bathers who arrived at Hammat Gader to be healed, and the texts found in the Cairo Genizah, from the mid-tenth century C.E., preserve the memory of the "Gadara bath" (Gil 1992:195). Sections of relevant letters speak of Jewish lepers who came there to be healed. If their destination was indeed the springs of Hammat Gader, then we know that the tradition of healing lepers at the site continued at least until the tenth century. In any event, however, it seems that they refer solely to bathing in spring waters, since the resort itself had already been destroyed and abandoned. Travelers who arrived at the site in the nineteenth and the beginning of the twentieth centuries found it desolate, with only the uppermost remains of the Roman baths complex protruding from the surface as a reminder of its former grandeur.

HISTORY OF RESEARCH

The first of the modern travelers to arrive at Hammat Gader and record his impressions was Buckingham (1821:441), in the year 1816, who reported that entire sections of the upper floors of the baths structure were intact. In the illustration accompanying his description, one sees the remains preserved to a height of three stories (Fig. 4); even if his illustration is exaggerated, it nevertheless demonstrates the fairly high degree of the structure's preservation.

Later on, in 1875, the French explorer Victor Guérin (1880:295-296) arrived at the site. He reported seeing remains of the baths structure, which he described as being built entirely of well-dressed basalt stones, and remarked that a number of halls roofed with semidomes were still standing. The water from the hot spring, referred to by Guérin as 'Ain Umm Salim, was led into a round pool measuring 13 m in diameter. According to local tradition, he noted, this spring has extraordinary

therapeutic properties. One could bathe in it comfortably in March and April, but in May the site was abandoned because of the oppressive heat.

Great importance is also attached to the report by Schumacher (1888:149-158), who visited the site in the late 1880s. He described the various springs at Hammat Gader, noting their different names and remarking that the spring water in the northeastern corner of the site – at 'Ain Sa'ad el-Far – is sweet, clear, and abundant. He went on to describe a holy site called Wely Selim, next to the remains of the baths structure, which was built for the local population who frequented the site.

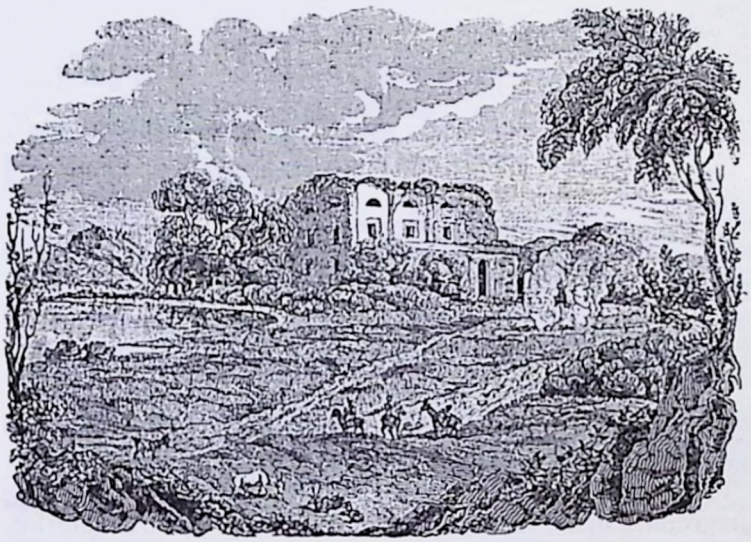


Fig. 4. Remains of Roman baths at Hammat Gader, sketched by Buckingham (after Buckingham 1821:Fig. 3).

The first excavation at Hammat Gader was conducted in 1932 by E.L. Sukenik on behalf of the Hebrew University of Jerusalem. This project focused on the remains atop Tell Bani, where a synagogue from the early fifth century C.E. was exposed (Sukenik 1935). The most important finds of this excavation are four dedicatory inscriptions revealed in the mosaic floor of the synagogue. They mention donors hailing from various settlements around the Sea of Galilee (e.g., Susita [Hippos], Capernaum, Arbel), and it is conceivable that these people contributed to the construction of the synagogue as an expression of their gratitude for being healed in the hot springs of Hammat Gader.

Later on, in 1980, a probe was conducted in the synagogue by Gideon Foerster on behalf of the Israel Department of Antiquities (Foerster 1983). His excavation uncovered remains of marble floors lying beneath the mosaic floors exposed by Sukenik. These earlier floors were assigned to the foundation stage of the synagogue, at the beginning of the fifth century C.E.

Parallel to the excavation of the synagogue, Sukenik carried out a survey and probe within the remains of the baths structure (Sukenik 1935: 114-117). In the course of the survey, a plan was drawn up of the Oval Hall (Area A of our excavation), containing two semicircular alcoves. According to Sukenik, this hall should be identified as the baths' *caldarium*; remains of additional cross-vaulted halls could be seen on the surface in the area adjacent to it.

Sukenik's expedition also conducted a probe in a passageway located 46 m east of the Oval Hall. From the description of this arched passageway, measuring 2 m in width and 2.7 m in height, and the accompanying plan, it is clear that he was referring to a section we exposed in Area J (see below). Moreover, his team conducted a survey and probes within the remains of the Roman theater on the eastern hill of Hammat Gader. The results of the survey were recorded in his plan and cross section of the theater and are the most accurate ones in existence to date.

An important source of information is a collection of photographs taken in the 1930s and 1940s, presently housed in the archives of the Israel Antiquities Authority, in which various parts of the baths structure can be identified. In a photograph of its western facade, for example, the top part of the central window is visible, protruding above the surface (Fig. 5); in another, one can see the 'Ain el-Maqleh spring and behind it the remains of a vault covering it (Fig. 6), which, as has been clarified in our excavations, is part of the structure that supported the dome above the spring. Years after the latter photograph was taken this vault was partly destroyed, thus further confirming the importance and value of such photographic evidence.

Various development activities were conducted on the grounds of Hammat Gader in the 1930s and 1940s, in the course of which various remains of the resort were exposed at random. On a small hill northwest of the baths structure, a row of gigantic,

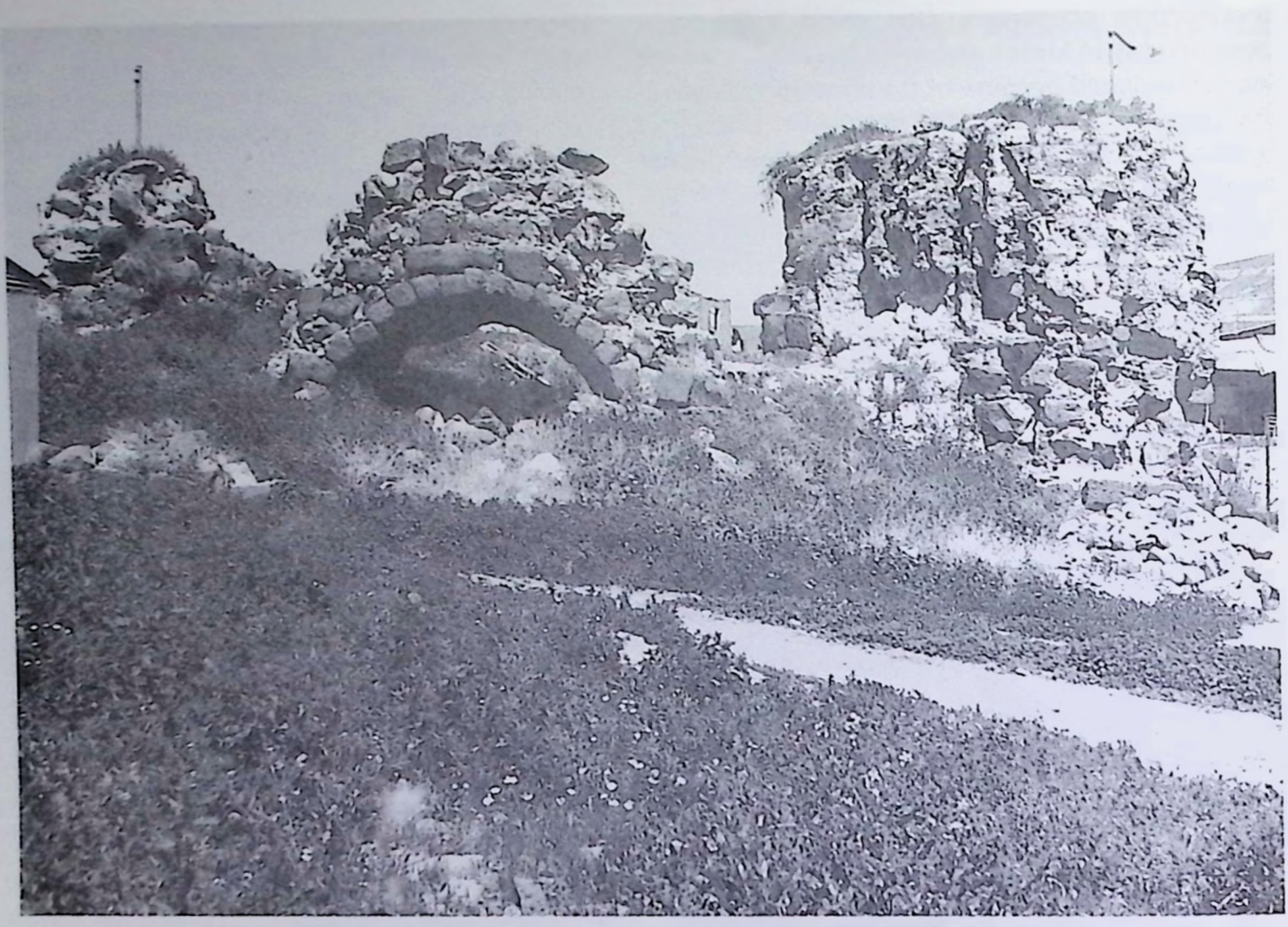


Fig. 5. Remains of arches and vaults in the baths building, as photographed in the early 20th century, looking east (Antiquities Authority Archive).

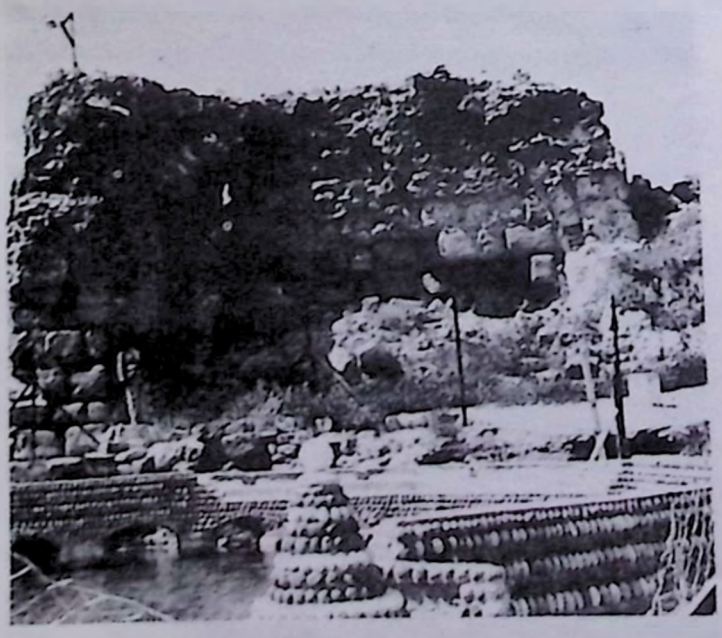


Fig. 6. Remains of the vault above the spring, in a photograph from the early 20th century, looking north (Antiquities Authority Archive).

northwest-facing basalt seats carved from a single block of stone and measuring 1.1 m high was discovered in *situ* (Makhouly 1938). Behind it, a section of a rather solid wall, 12.9 m long and 1.1 m thick, was exposed. It became clear in the course of our excavations that this wall was part of a monumental structure that was possibly built as an extension of the baths building.

In the area east of the baths, remains of a Byzantine church were discovered, as well as sections of stone-paved colonnaded streets and remains of living quarters (Hirschfeld 1987). On the basis of these data, we will suggest a reconstruction of the plan of Hammat Gader in the Roman-Byzantine period (Fig. 7), according to which the centrality of the baths structure exposed in our excavations is prominent. It is located between two hills – the eastern one, next to the

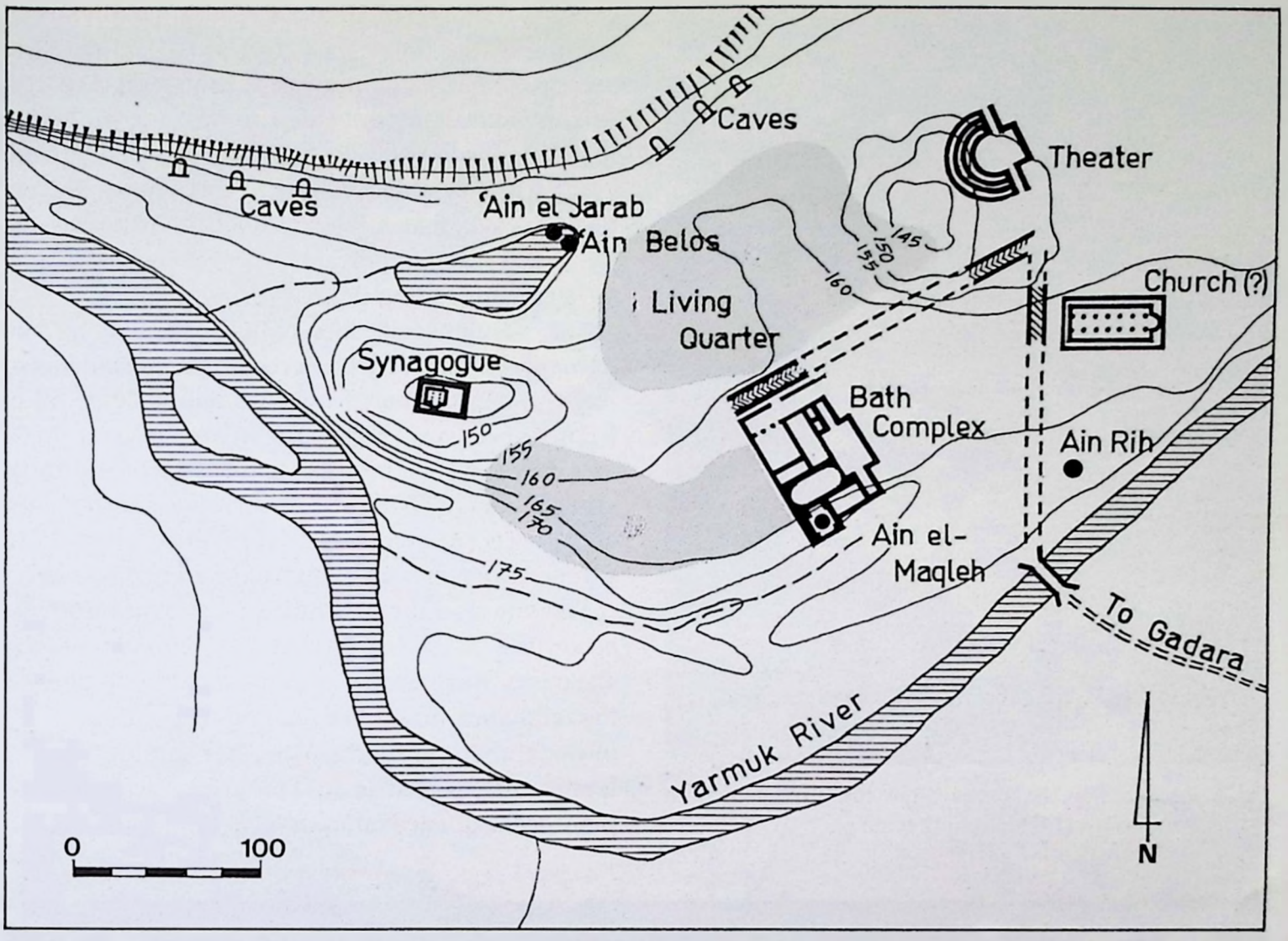


Fig. 7. Reconstructed plan of ancient Hammat Gader.

theater, and the western one, where the synagogue stood. Between it and the various other parts of the resort extended a network of paved streets, as was common in urban planning of the Roman period.

From 1952 to 1967, Hammat Gader was subject to Syrian rule. The Syrian authorities built a number of pools on the site, as well as a large mosque next to the Roman baths which is still standing today.

In 1969, two years after the site again came under the control of the Israeli authorities, the area of the Roman baths began to be cleared (under the supervision of S. Tamari) in preparation for an organized archaeological excavation. However, this activity was aborted due to terrorist attacks. In photographs from this period, the baths structure can be seen buried almost completely beneath a thick cover of wild vegetation.

The systematic excavation of the baths under the direction of the authors of this report began in May 1979 and ended in October 1982, during which time seven seasons of excavation were conducted (Hirschfeld and Solar 1981, 1982). The first was devoted primarily to clearing the interior of the baths structure and the area around it (Fig. 8). It was during this season that we were first able to evaluate the extent of the ruins, as well as the layers of debris, ranging in thickness from 2 m to more than 3 m, which covered the building.

The enormous amounts of debris and ruins were cleared with machinery; the actual manual excavation work commenced only when we reached the uppermost phases of occupation. In subsequent seasons, the excavation area was extended, primarily eastward and northward (Fig. 9). By the end of the seventh season, we had



Fig. 8. Remains of the baths after the first season of excavations (1979), looking south.

exposed a section of Hammat Gader's main street, delimiting the baths structure on the north, and sections of the residential area on the west (Fig. 10). At this point it was decided to halt the dig, even though many parts of the complex, especially to the east, still remained beneath the ruins. Nevertheless, we managed to obtain a rather impressive picture of the important features of the baths structure, including the hot spring itself.

The remains of the baths exposed in the excavations formed a huge rectangle, measuring at least 78 m from north to south and at least 60 m from east to west (Fig. 11) – an area of over 4,600 m^2. Moreover, 300 m^2 of a street north of the baths structure and 750 m^2 of a residential quarter west of it were exposed. Thus, the entire excavation extends over an area of approximately 5,500 m^2.

The site was divided into six excavation areas, according to the architectural division of the structure. Each area was designated by a letter of the alphabet and later named according to its physical shape or function, or after a unique find or feature discovered in it. The areas, according to their order of excavation, are as follows:

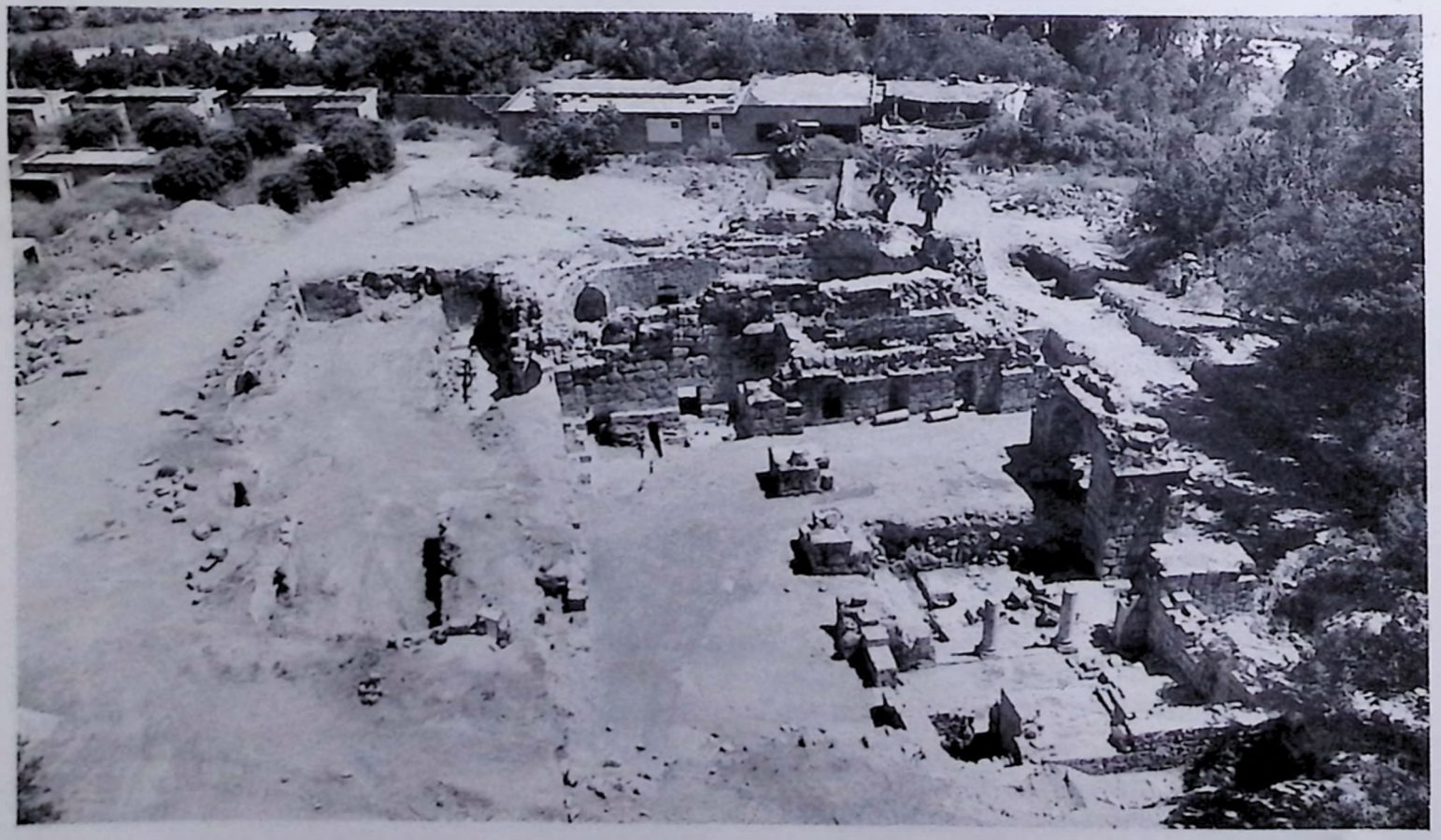


Fig. 9. Remains of the baths after the third season of excavations (1981).

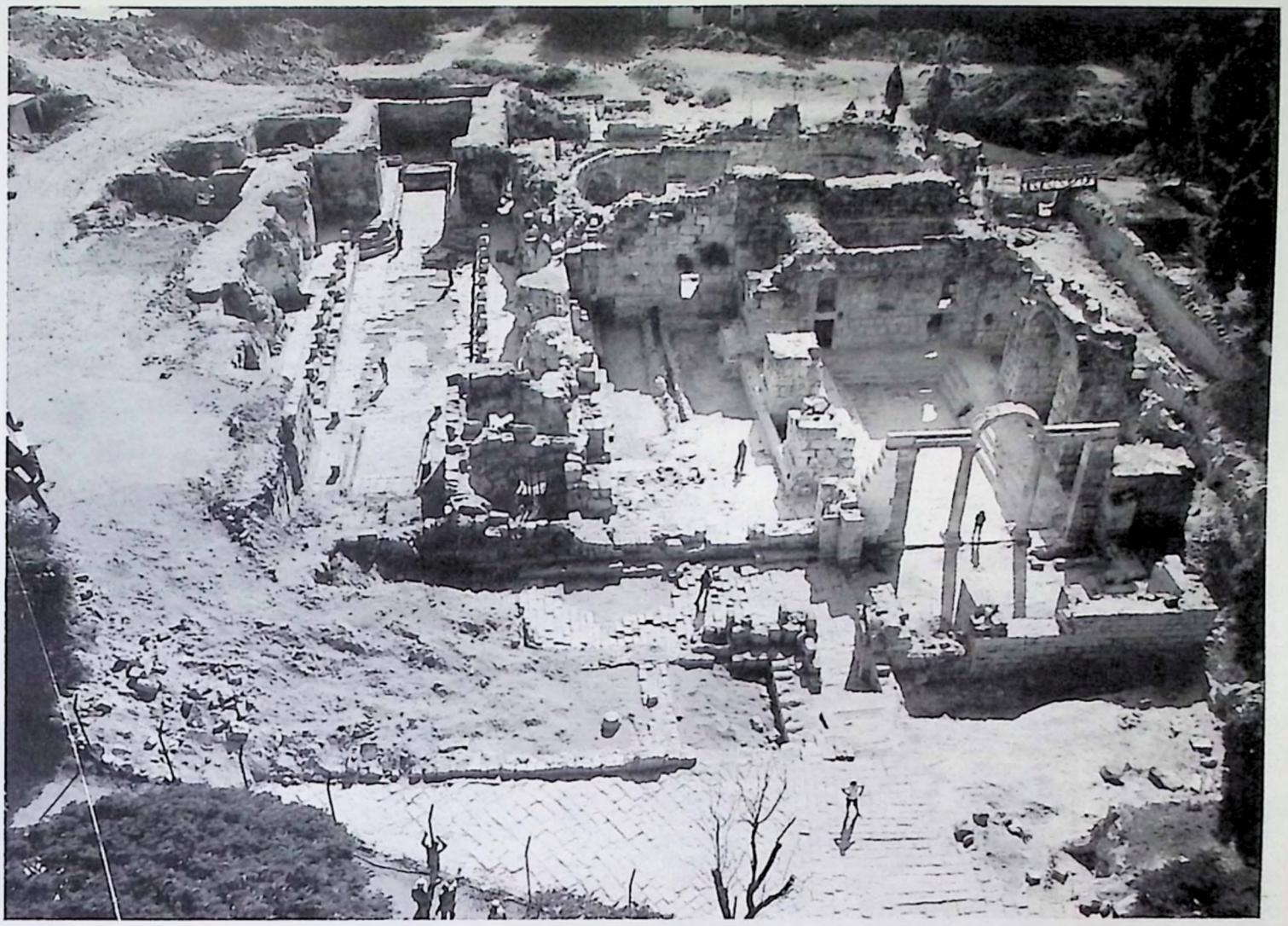


Fig. 10. Remains of the baths at the conclusion of excavations (1982), looking south.

Area A	The Oval Hall, north of the Hot Spring Complex
Area B	Passage Rooms, north of Area A
Area C	The Hall of Piers, north of Area B
Area D	The Hall of Fountains (initially termed the Hall of Alcoves), in the eastern part of the building
Area E	The Hall of Inscriptions, between Areas C and D
Area F	The Service Area, west of the building
Area G	The Hot Spring Complex, in the southern part of the building
Area H	The Entrance Corridor and the street north of the building
Area J	The eastward extension of the building.

The architectural remains are the site's dominant feature; however, the other finds are no less impressive in their quantity and importance, as they ultimately enable us to date the architectural remains.

THE CHRONOLOGY

It has become evident from the results of the excavation that the baths complex was built in the mid-second century and was in continuous use until its destruction in the earthquake of 749 C.E. During this period of some 600 years, there were five different phases of occupation, each of which finds architectural expression in the building. Phase I is the original structure from the second century, most probably from the time of Emperor Antoninus Pius (142-161), whose name is mentioned in one of the inscriptions found at the site. Phase II may be subdivided into two: Phase IIA dates to the mid-fourth - mid-fifth centuries,

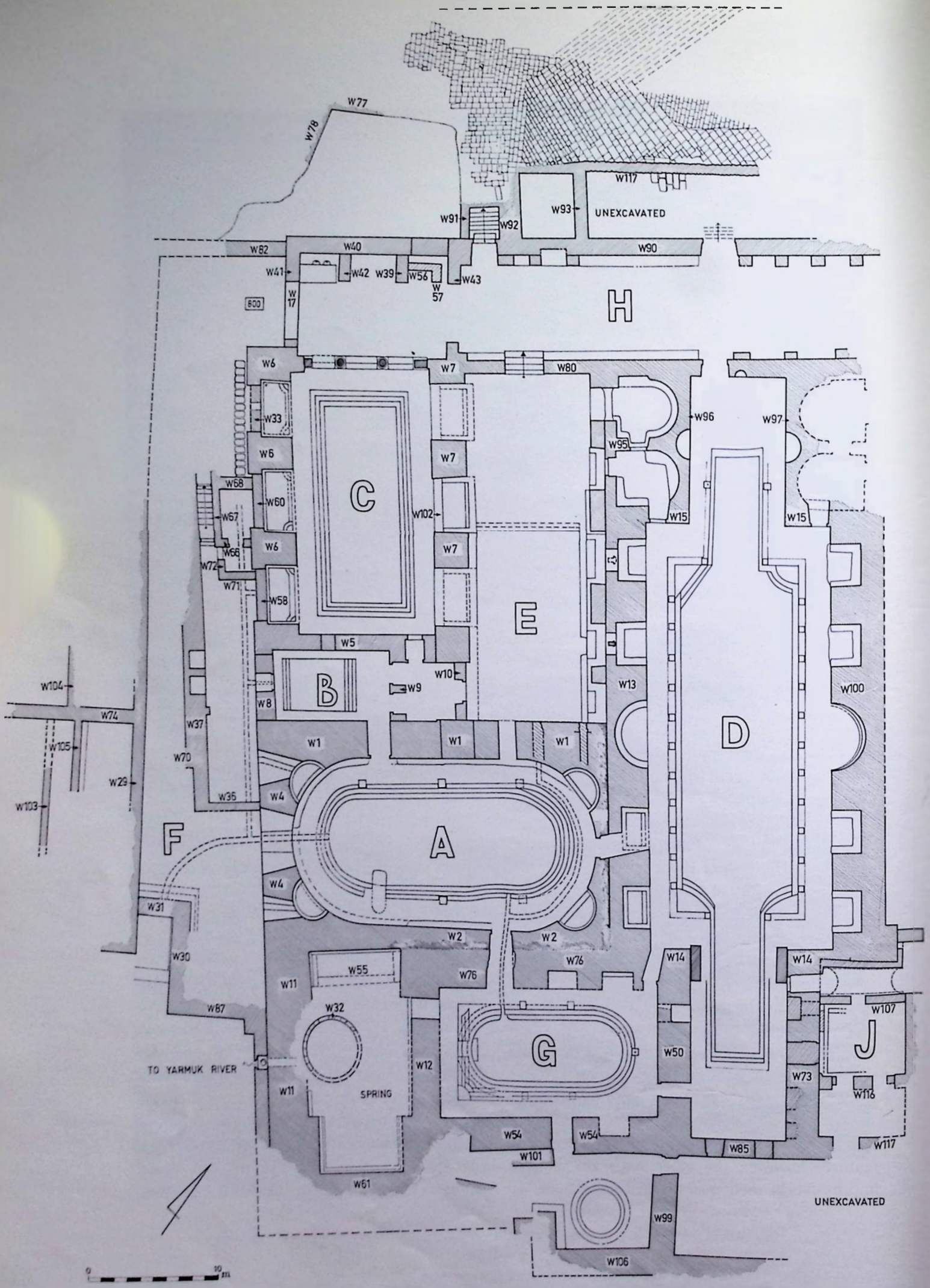


Fig. 11. General plan of the remains of the baths exposed in the excavations.

and Phase IIB from the mid-fifth century until the end of the Byzantine period (mid-seventh century). These subphases may be detected in the architectural repairs made in the baths as the result of damage probably caused by an earthquake. Inscription no. 1, which dates to the year 455 and explicitly mentions one of the earthquakes which hit the site, fixes the date of the floor in which it was embedded to Phase IIB. Phase III of the baths structure overlaps the Umayyad period, beginning with renovation activity in the time of the Caliph Mu'awiya (according to the inscription found in the excavation) and ending with the earthquake of 749. Two additional phases (IV and V) – the earlier one from the Abbasid-Fatimid period (eighth-eleventh centuries) and the later one from the Middle Ages – were discerned on top of the building's ruins.

To sum up, a total of five different phases were distinguished on the basis of the excavations:

Phase I The Roman period (mid-second to mid-fourth centuries)

Phase II The Byzantine period, divided into two subphases:
IIA – mid-fourth – mid-fifth centuries
IIB – mid-fifth – mid-seventh centuries

Phase III Umayyad period (661-749)

Phase IV Abbasid-Fatimid period (eighth-eleventh centuries)

Phase V Middle Ages (thirteenth-fourteenth centuries)

The following chapters present the results of the excavations at Hammat Gader.

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CHAPTER 1
ARCHITECTURE

This chapter is the longest and main one of the report. We begin with a discussion of the building methods and materials on the one hand, and the water supply systems on the other. These two subjects serve as an introduction to a detailed description of the baths' remains, which are dealt with chronologically, from early to late. At the end of the chapter there is a general discussion of the place of the Hammat Gader baths within the architectural context of baths in the Roman- Byzantine period, and, finally, an attempt is made to reconstruct the baths structure and its various components. The proposed reconstruction is based on data presented throughout the chapter and therefore summarizes the information contained therein.

Comparative research on the Roman baths at Hammat Gader is based primarily on two excellent monographs devoted entirely to bathhouses in the Classical period. Both of these studies (Nielsen 1990; Yegül 1992) cover most of the scientific data appearing in this report and include hundreds of illustrations and plans of bathhouses throughout the Roman empire. Yegül's book is invaluable owing to its detailed treatment of bathhouses in the eastern provinces of the empire, especially Asia Minor and North Africa. As we shall see below, these regions contain most of the architectural material which parallels our finds at Hammat Gader.

BUILDING METHODS AND MATERIALS

Giora Solar

This chapter attempts to describe the various elements of the baths structure by "dismantling" its components – both its architectural and structural units as well as the materials used to construct it. Since we are not seeking to offer a stratigraphic analysis, the treatment of chronological periods becomes secondary. Basically, we will be describing the shell of the building, which is divided into "load-bearing" and architectural elements, as well as the features within the shell, i.e., within its walls – the entrances, windows, alcoves, niches and installations, the various building materials, and their mode of use.

Foundations – The first structural element to be described should be the foundations. In order to study this element, one must either excavate beneath or along the walls, or dismantle some of the built elements.

In the case of Hammat Gader, the structure is so complete that in very few places were we able to reach or see foundations. The only clue to their character is to be found beneath the floors of Area A, which will be described in detail in the section dealing with floors. The foundations of secondary walls were exposed in two places: Area C (W39 and W42) and Area H (W92). In the first two walls we see a course of basalt fieldstones joined together by hard bonding material. The course protrudes irregularly, up to ca. 20 cm, from the plane of the wall. Above the foundation was laid a partially worked leveling course which juts out a few

centimeters from the plane of the wall.

W92 has survived only to the height of the foundations; on the one hand, it probably served as the wall of a shop and therefore is actually located outside the baths complex, and on the other, it served as the wall of a staircase descending from the street to the baths. The visible course was built of various architectural elements – column drums and bases – in secondary use. Foundations of this kind belong to a later occupation phase.

The building's state of preservation and the fact that the walls stand vertically without cracks led us to conclude that the builders of the foundations did an excellent job, taking advantage of the best knowledge, skills, and certainly the well-known Roman cement.

Walls – The walls of the Hammat Gader baths are particularly well preserved. Their average height ranges from 4 to 5 m, and in several places exceeds 8 m! This exceptional state of preservation makes the structure one of the most important and interesting examples of Roman architecture at its best.

The walls have two main roles. The first is structural: they are load-bearing elements, i.e., they carry the load of the roofs and ceilings. The second role can be defined as architectural, since the walls, in fact, create the structure's architecture. They define the spaces in which the various elements are built – doors, windows, alcoves, niches, pipes, etc. Some of the walls are ornamented.

The identification of which walls in a structure are load-bearing and which are not (we would then call them "curtain" or "partition" walls) may help us better understand the character of the roofing, ceilings, and second floors. These elements are usually missing in archaeological structures; however, at Hammat Gader we had the good fortune to find the existing evidence for some of them.

Although it should not be considered a golden rule, the division into thick and thin walls within the same structural system usually coincides with the division into load-bearing and non-load-bearing walls. Nevertheless, the thickness of a wall does not always indicate its structural role, since in some cases this is the result of its height, and in many cases it is due to the presence of alcoves and niches and other infrastructural elements within the wall.

In our case – in Area A – even if the remains of the vault were not found in *situ*, and parts of it were revealed in the ruins, we could assume, and then only from the thickness of W1 (2.7 m), that we were dealing with a wall supporting a vault. In contrast, the thickness of the long walls in Area D (3.1 m for W13 and 3.7 m for W100) is due not only to the need to support the vault, but also, as we know from the structure, to the need to include large alcoves in these walls. The alcoves are ca. 2 m deep from the plane of the wall and therefore an especially thick wall was required to contain them.

Other walls, such as those in Area H (W90, 1.2 m thick), may indicate the existence of a small and relatively light vault. Area J is possibly an exception. This area contains an especially thin wall (W107, 0.6 m thick) supporting a vault; however, this is a vault with a very small span (less than 2 m) and therefore its load is not great.

Piers and Pilasters – A pier is a structural element which, like a wall, transfers the load of a building's superstructures (roofing or upper floors) to the foundations. Unlike a regular wall, which characteristically has the form of a complete and continuously built line, a pier may be regarded as a kind of fragmented wall. Examples are the two long walls, W6 and W7, of Area C which we have termed the Hall of Piers. The piers were designed to support a vault, to incorporate alcoves, niches and installations, and, at the same time, to allow for large entrances into nearby corridors, as well as windows for ventilation and lighting. Each pair of piers in W6 and W7 was linked by a vault, creating a space of ca. 4 m between them which contains a bathtub. The function of the linking vaults was to create continuous walls above the piers that would support the large vault which roofed all of Area C.

The pilaster is another type of supporting wall. Thus, the "protrusions" built along W90 facing Area H, as well as those along W80, also facing Area H, may be defined as pilasters or buttresses. It is possible that the pilasters built along W13, on the side facing Area E, as well as those supporting the

vault of W14 in Area D, fall in the same category.

The pilasters along W80 of Area H are relatively small (0.5×1 m) and ca. 2.5 m apart. Were identical pilasters built along W90, exactly opposite them, we could then conclude, almost with complete certainty, that these are the lower parts of the arches that supported flat roofing. Indeed, pilasters are located along W90, but they are not situated opposite the others and are ca. 1.6 m apart. Thus, the role of these pilasters was different: they were not meant to support the roofing over Area H, but instead had two functions – primarily structural – that were utilized for architectural purposes as well. W90 is a relatively thin wall, north of which lie a row of shops and a street. The shops and street are at a much higher level than Area H and are located on top of a fill supported by W90. Thus, a relatively thin wall served as a retaining wall and at a certain stage most probably began showing signs of structural failure, i.e., shifting, cracking, tilting, and collapse. This problem could have been solved by the installation of a series of buttresses to reinforce the wall. One could bridge the "pilaster buttresses" along the wall by building engaged arches that also create small niches where those waiting to enter the pools in the bathhouse could sit and rest. The pilasters built along W80 most probably played a similar role.

It is not at all clear whether the engaged pilasters in Area E (behind W13) had a structural role; however, there is no doubt that the space between them had a clear architectural function, providing benches and/or shelves for the placing of clothing and personal effects. Arches were apparently built between the pilasters, but these have not survived.

Two "pilasters" whose function is clear were built along W14 in Area D. It appears that the southern vault in Area D began to sink or was cracked. The solution to this problem was the construction of a broad arch (2.5 m) beneath the vault as a support. These pilasters are actually the "legs" of the arch that have been preserved to a height above the arch's spring line. Two additional pilasters form part of the columned portal in Area C, supporting the lintels between them and the columns. In this case, the pilasters may be considered as "engaged" or "non-free-standing" columns.

Materials, Building Methods, and Stone-working Techniques – Basically, the walls were built of local materials most suitable for achieving the best results. Most of the masonry used for the walls at Hammat Gader is basalt, except for certain sections and halls where limestone was employed. Since all the walls were covered with plaster, marble, mosaics, etc., the building stone was not selected because of its aesthetic appearance. We may thus assume that basalt was chosen because of its availability in large quantities at a reasonably convenient distance from the site, its cost, and its suitability for the intended function, i.e., it is workable, durable, withstands loads, and is not excessively heavy.

The exception to the "rule" regarding the use of basalt as a building stone is the hall in Area D, which was built almost entirely of relatively soft limestone. The advantages of limestone are its facility to be worked and its low weight relative to basalt. Since this hall has many niches requiring intricate working, we may assume that one of the considerations in choosing this stone was its ready workability. The main disadvantage of limestone is its low durability under wear and load. In order to compensate for this, the thickness of the long walls supporting the vault of the hall was increased.

Two other localities in the building bear evidence of extensive limestone construction. The first is W1 and W2 in Area A. These two walls contain vertical architectural "seams," between which are sections of limestone (Fig. 1). We have not been able to find functional explanations for these sections. It can clearly be seen that repairs were made in W1; however, they are not the reason for the incorporation of limestone within a basalt wall. Here we are possibly dealing with a historical or technical phase which we failed to comprehend; perhaps the builders decided to take advantage of a supply of limestone that was quarried and brought to the site for building arches and vaults, but was not used for this purpose.

The second place where limestone was used intensively is a small section of wall at a corner formed by the junction of W7 and W80 and the columned portal of Area C. The damage to this portal called for the dismantling and repair of the existing walls. The repair was made with well-



Fig. 1. Sections built of basalt and limestone in the northern wall (W1) of Area A (Oval Hall), looking north.

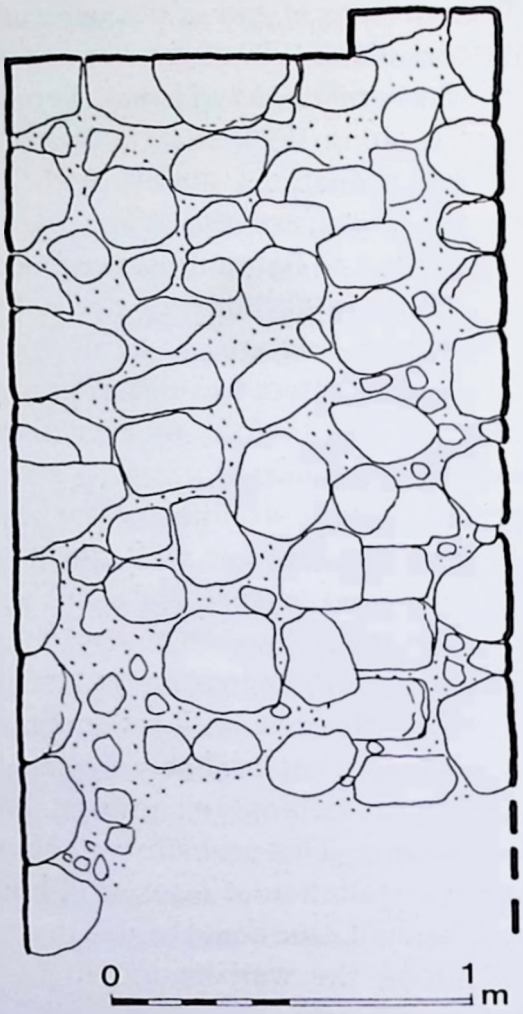


Fig. 2. Section of the western wall (W6) of Area C (Hall of Piers) demonstrating wall construction technique.

dressed limestone blocks laid in alternating courses of headers and stretchers. This method is exceptional in our case; however, it is noteworthy because of its degree of sophistication. Generally, this method of construction would be considered *opus quadratum*.

The building material used in the cores of the walls varies from large basalt boulders in the especially thick walls, through river pebbles (basalt and limestone) of varying sizes, to sections in which dressed ashlars are integrated primarily in the limestone walls of Area D.

Except for the special construction of Area D, both faces of all the other walls are built of dressed basalt and their core consists of rubble and cast mortar. Such, for example, is the section of the western wall of piers (W6) in Area C (Fig. 2). This construction method is known as *opus caementicum* (Marta 1985) and sometimes as *opus vittatum* (Adam 1988).

The mortar used as a bonding material in the entire complex is based on a mixture of lime and various fillers and aggregates. The aggregates that are visible are made up of tiny river pebbles, gravel and basalt chips. Local sand was in all likelihood used as a filler. It is of volcanic origin, having pozzolanic properties which are essential for lime-mortar curing (Adam 1988:69-79).

Except for the single instance mentioned above, practically no special methods (such as header and stretcher, *opus reticulatum*, etc.) were employed in building the walls. Construction invariably took the form of laying rectangular, cut stones in courses. In most cases, the walls were built of two such faces with mortar in between. A number of walls feature "retreating courses," i.e., each course recedes a few centimeters from the plane of the course below it. This method is especially evident in the piers of W6, on the side facing Area F (Fig. 3).

Most of the masonry in the walls of the complex was dressed as follows: the corners of the rectangle were coarsely dressed, and the side that was intended for the wall's facing was aligned with the plane and afterwards coarsely dressed with a single-pointed chisel. This working technique varies from rough dressing to relatively fine and regular dressing that appears as deep, uncrowded, and organized dots. The Arabic term for this type of stone dressing is *taltish* (Canaan 1933:18-19).

The work on the stone's margins determines the appearance of the wall, especially when it is not



Fig. 3. Stepped courses in the western face of W6 of Area C (Hall of Piers), looking east.

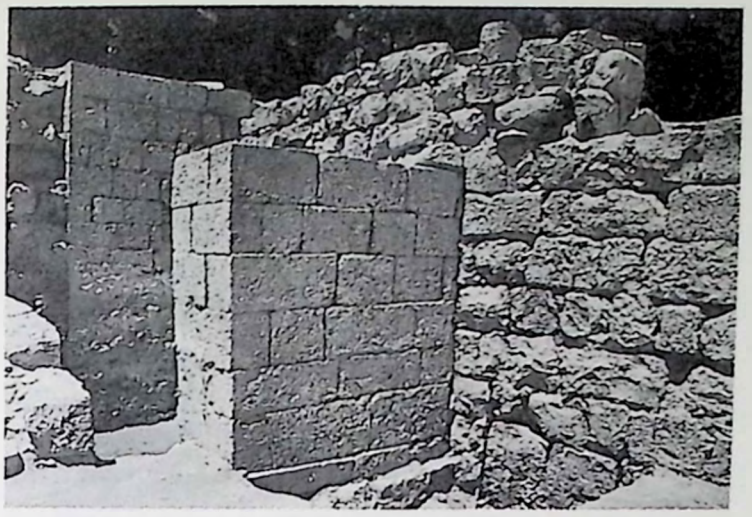


Fig. 4. Roughly and finely dressed stones in the northern wall (W40) of Area C and in the pilasters standing perpendicular to it (W42 and W41), looking northwest.

covered. When the corners of the building stone are not dressed precisely at right angles, gaps and irregular junctions are created between the stone courses; stone fragments and flakes were used to fill these junctions. The resultant effect is that of rough and imprecise construction; however, as noted, this had no visual significance since the walls were covered.

In singular instances, the basalt stone was given a finer dressing, on the level of fine *taltish or msamsam* (Canaan 1933:18-19): the corners were well aligned and right angles were accurately hewn. The sides were finely chiseled, usually with a single-pointed chisel, until the surface was almost smooth. Such chiseling was always employed for dressing ornamented or sculpted pieces, mostly on steps and occasionally also on walls. *Msamsam* and fine *taltish* were used on the engaged pilasters of Area C (W39, W42, and part of W41 – Fig. 4), as well as on benches between the pilasters built along W13 in Area E. This dressing gives rise to an especially aesthetic appearance, since the precision of the stones' corners creates very narrow joints, in contrast to the rough dressing, where the joints are wide and irregular.

Carving of a particularly high quality was invested in the architectural elements adorning the building. The classic example of this is the columned portal, the elements of which were worked with fine chisels and great patience until the desired aesthetic effect was achieved.

A different method was applied for the dressing of the softer limestone. A toothed dressing hammer or chisel was used to create a "combed" surface or a dressing effect called *sahuta* (Canaan 1933: 17-18).

Special Building Methods – A number of special methods were used in the complex, e.g., in W30 and W31 of Area F. This area receives the water draining from the various pools as well as the spring water, through channels draining into the Yarmuk River. These channels were built within a massive substructure supported by the perpendicular walls W30 and W31. It is clear that all construction in this section was carried out in water or mud. Such a situation made it difficult to build foundations and stabilize walls, and, as a result, very unusual solutions were apparently required,

some of which are still in evidence. The unique solution to this problem in W30 and W31 was the joining of the stones to one another by what is known in carpentry as dovetail joints (Fig. 5), i.e., the short side of one stone has a flaring mortise while the short side of the adjacent one has a flaring tenon. The tenon of one stone is inserted sideways into the mortise of the adjacent stone, making a perfect fit, thereby preventing their disengagement if the bonding material in the wall fails or if there is a some degree of sinking of the foundations. The height of the described courses is 0.6 m and the length of the stones ranges from 0.7 to 1.0 m. Here we are certainly dealing with a complicated building operation involving large stones. In addition to the unique method of joining the stones, they were also laid in "retreating courses." There is no doubt that the above-described working of the hard basalt stones was the result of a specific technical requirement.

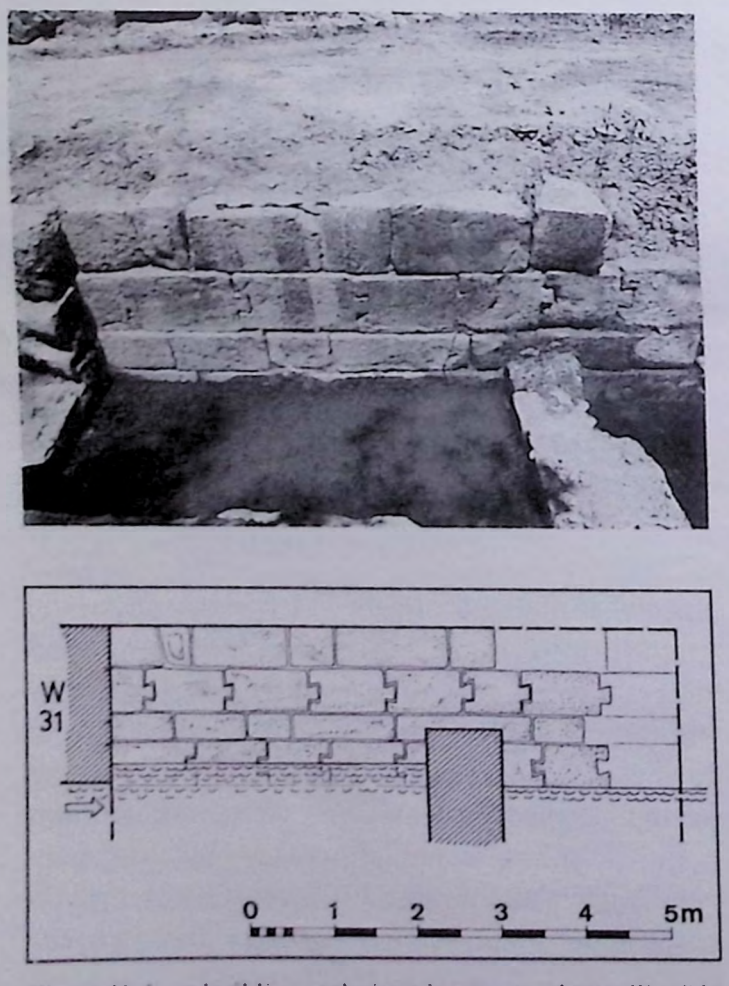


Fig. 5. Unique building technique known as "dovetailing" in the walls (W30, W31) bordering the area of the spring, looking east.

It is possible that these efforts stemmed from the need to support the foundation of the water tower that was located, in our opinion, on the substructure supported by these walls and the western facade of the building (see below, the section on Water Supply).

Vaults, Arches, Lintels – Within this subsection dealing with the shell of the building, we shall describe the superstructures, both those above the large spaces and the openings, as well as the alcoves and the niches, since, for all intents and purposes, we may view these elements as small structures with shells of their own. The superstructures are divided into main vaults, domes, arches, and beams.

Several sections of vaults, both in *situ* and found in the debris, have been preserved in the baths of Hammat Gader. The excellent state of preservation of parts of the complex enables us to study and analyze the superstructures, which in many other excavations do not exist or are only conjectured. The largest vault is that of Area A; the entire hall is roofed with a monumental vault measuring 12×24 m. Because of the geometric shape of the hall, there are two semidomes, one on either side, joined by a barrel vault. From the courses that have survived in *situ* and the sections that were found in the debris, we know that the vault was built of dressed limestone in courses up to 0.25-0.3 m high, and above it there was a thick casting of rubble and mortar (Arabic: *djabshe*; Canaan 1933:12, 26) (Fig. 6). The other vaults above Area B (sections *in situ*), Area C (sections in the debris), the two narrow units on either side of Area D (*in situ* and in the debris), Area G (in the debris), and in the northern corridor of Area J (section *in situ*) were built in a similar fashion. A few remains attest to the existence of a vault over Area E, a dome over the elevating pool (a pool built around the hot spring to raise the level of its water), and small domes over the two apsidal rooms to the west of the northern wing of Area D.

Theoretically, there is no limitation to the span a vault can cover. Of course, the larger the span, the more complicated are its planning and construction. The large span and load of a vault call for precision in the planning and erection of scaffolding, so as to avoid any risk of collapse



Fig. 6. Limestone roofing of the dome in Area A (Oval Hall) and the semidome of the alcove, looking northeast.

during work. The huge quantities of mortar and the relatively long process of casting and hardening necessitate accurate and meticulously planned timetables. The extreme loads and stresses caused by very large vaults dictate very careful planning of the structural system as a whole. Therefore, although we are speaking of known methods, and of spans that do have precedents, the scale of the entire complex is one that certainly required the involvement of professional manpower – engineers, architects, foremen, stone masons, foundation layers, mixers of cement and mortar, scaffolding experts, etc.

In order to understand the great challenge faced by the builders of the Hammat Gader baths, we here present the dimensions of its vaults:

Area A – 12×24 m
Area B – 5×9.2 m
Area C – 11×19 m
Area D – 7.5×12.5 m in the northern wing, 7.5×14 m in the southern wing, and 13.5×30 m in the center
Area E – 11×24.5 m
Area G – 9×17 m
The spring – 8×8 m
The rooms between Area D and Area E – two apsidal rooms, each with a diameter of ca. 4 m.

All these are in addition to the many dozens of domes, semidomes, vaults, and arches built at several points in the structure.

As already mentioned, the majority of the vaults and domes are made of limestone or tufa, which are lightweight and easily worked. A good example of this is the vault in Area B, parts of which have survived intact (Fig. 7). The vault is built of tufa, identifiable by the many characteristic pores as well as the imprints of leaves, stems, and roots. Its foundation, i.e., the first two courses, is built of light limestone which is easily worked on the one hand, but, on the other, is stronger than the tufa and thus more suited to support the vault.

The exceptions to this rule of lightweight stone for vault construction are found in Area C: the vaults between the piers (W6 and W7), as well as the small niches at the top of W5, were built of basalt. It appears that the vaults between the piers were built of basalt since they were to bear the tremendous weight of the vault that roofed Area C. Such a load would have exceeded the bearing capacity of soft limestone.



Fig. 7. Remains of the vault of Area B (passage rooms) preserved intact, looking east.

The niches in W5, facing Area C, are quite small. The main one is semicircular and roofed over with a semidome; the other two are rectangular in plan and so small that it was easy to roof them with basalt vaults. The semidome of the main niche was hewn out of a single stone measuring 0.65×1.5 m.

The best state of preservation of vaults and domes is noted in the four corner alcoves in Area A and in some of the alcoves in Area D. The alcoves of Area A are semicircular. Up to the springing

point of the vault, the wall of each alcove is built of basalt; the roofing of the semidome is built of limestone. The semidome is meticulously constructed, but the stones were not laid in an orderly fashion. This sloppiness went unobserved since the alcove is clad with marble and plaster.

Area D was originally called the "Hall of Alcoves" since five alcoves on each side of the hall – four rectangular and one semicircular – faced the central space. Originally, there was a bathtub in each of the rectangular alcoves. These alcoves are roofed with barrel vaults that in some cases have been completely preserved, while the two semicircular alcoves are roofed with semidomes. As in all the halls, the roofing is constructed of soft limestone.

As mentioned above, the central space of the hall, measuring 13.5×30 m, was roofed with a monumental stone vault, the largest one in the baths complex (this conclusion is at variance with the proposed reconstructions that were published in the early excavation reports). The vault, parts of which were found in the debris (Fig. 8), was built of fairly large tufa voussoirs carved in a trapezoidal shape, each being 0.7 m high and between 0.15 m (the lower part) and 0.25 m (the upper part) wide.



Fig. 8. Remains of a vault found in the debris of Area D (Hall of Fountains), looking north.

Openings – The building's good state of preservation enabled us to study and describe the entrances and the lintels *in situ*. It should be noted that the builders of the complex tried, despite difficulties, to build entrances with horizontal lintels, and not arches or rounded vaults. The obvious advantage is that this enabled them to install rectangular doors in such entrances. The difficulty lay in constructing a horizontal bridge over the relatively large entrances which a regular arch would have spanned easily.

The roofing over the entrances is divided into two types – a monolithic lintel and one composed of several stones. A lintel of the first type – a large stone beam – was found above the southern entrance in Area A, linking it with the oval pool in Area G. The doorway is 1.4 m wide, and at a height of 2.4 m above the threshold is a basalt lintel, 0.45 m high and 2.3 m long. On each side the lintel is affixed above ca. 0.45 m of the doorjambs. The problem with large lintels stems from the need to find, work, and lay in place a stone beam of such size. In order to bear the load of the wall above it, as well as its own weight, the lintel must be especially high; otherwise it could break in the middle or at other weak points. The customary solution to this problem is to build a "relieving" or "discharging" arch on top of lintels that span large entrances. Such an arch was built above the entrance described here; it consists of three stones which together form an arch, preventing the load of the wall from resting directly on the lintel and distributing it through the doorjambs to the foundations. (Nevertheless, the lintel stone cracked at the point where it was affixed to the wall, apparently due to its own weight.) The lintel facing the pool in Area A is one of four basalt beams roofing the passage through W2.

Another monolithic lintel was found above the passageway in the corner formed by walls W13 and

W14, adjoining Areas D and G. The entranceway is only 1.0 m wide, and for this reason the builders apparently were not concerned about possible breakage of the lintel nor did they trouble to build a relieving arch over it. As should have been expected, the lintel broke at two points at least. This passageway is at least 3 m long. It has indeed been destroyed, but on its inner side, facing Area G, it was apparently roofed with a barrel vault.

Another small entrance roofed with a monolithic lintel is the passage through W50, leading from Area G into Area D. The entranceway is only 0.8 m wide and a lintel was laid over it at a height of 0.55 m, which is also the height of a course. With such an entrance and lintel height there is no need for a relieving arch, and the lintel found there is indeed intact.

The lintels in the other entrances are built of a number of stones; however, since the builders insisted upon flat lintels, they were forced to construct them as flat arches. Although a few entrances with regular arches were built, mainly in one wall – W73 – in the southern wing of Area D, this was not the norm; most of the arched entrances were constructed, as mentioned, with flat arches (Adam 1988:186-187). The risk taken in making a flat arch lies in the fact that any small imprecision in the cutting of the voussoirs or slight lateral movement of the walls could cause the arch to sink and collapse immediately. Such a situation can be averted if the voussoirs are cut and laid very accurately and the joints are completely filled with mortar so that there is full contact between the arch stones, thus ensuring that the massive side walls are sufficient to prevent any shifting. Such an operation also calls for great care in the erection of the scaffolding. Apparently the builders of the Hammat Gader baths took all of the above precautions, since several of the flat arches are still standing, despite earthquakes and other structural damage.

Among these special passages, the four leading off from Area B stand out in particular – one links it with Area A, another with Area C, and two more are located in the partition wall (W9) dividing Area B into two. The most impressive one is the first, both on account of its span – 1.85 m – and the thickness of the wall through which it passes – 2.6 m (Fig. 9). The arch facing Area A is almost completely flat while that facing Area B is slightly curved. In fact, the latter is not a flat arch but rather a flat vault. It was built of five voussoirs, while two additional ones, cut at an angle to fit the other five, were integrated in the walls. The height of the voussoirs of the flat vault is ca. 0.45 m, their width is 0.3-0.4 m, and their length reaches up to 0.7 m. One can clearly see the white mortar in the joints between and above the vault stones.



Fig. 9. Entrance in W1 between Area B (passage rooms) and Area A (Oval Hall), looking south.

The doorway leading to Area C is 1.2 m wide and spanned by a completely flat arch (Fig. 10). The openings in the wall dividing Area B into two are of impressive size, primarily because of the fact that they were breached in what was meant to be a partition wall between two small spaces. The width of these doorways is ca. 1.5 m and great effort was invested to incorporate a flat-arch lintel in them.



Fig. 10. Entrances in the eastern room of Area B (passage rooms), looking west. Note the round holes in the lintel stones.

An interesting phenomenon, the significance of which we were unable to evaluate, is noted on one side of the above-described flat-arch lintels. There are round holes in each voussoir above the doorjamb and also in some of the keystones. The holes appear only on the sides facing Area B, i.e., they are absent on the outer sides, facing Areas A and C. These holes were apparently intended for housing some sort of beam or rod. They were possibly used for the attachment of a curtain, an ornament of some kind (garland?) or an inscription.

The above-described lintels are all built of basalt and have survived *in situ* and intact. Similar flat-arch lintels exist in other entrances (W15, W50, W73 and W85 in Area D; W3 in Area A). Less use was made of limestone for the construction of flat arches. Two such arches have survived – one above the doorway (in W13) in Area E leading to the adjoining apsidal room and Area D, and the other above the entrance linking Area A with Area E, through W1. The first arch was apparently one of four identical ones that led to the apsidal rooms flanking the northern wing of Area D. The other doorway, joining Areas A and E, differs from the previous ones both in its character, being built of limestone, and in the size of its stones. It is clear that this entrance was a renovation of an earlier section that had collapsed or was intentionally dismantled in order to make changes in the plan. This entrance lacks doorjambs; the lintel is built of three large voussoirs, in contrast to the five that form all the previously mentioned flat-arch lintels. The width of the entrance is 1.3 m, the thickness of the wall through which it passes is 2.7 m, and the height of the voussoirs is 0.65 m.

Windows – The preserved windows rank among the most interesting and rare elements at the site. Baths in general, and spas in particular, require a large number of openings and windows. Most of the halls are roofed and closed; therefore, without enough openings for ventilation and lighting they would be very dark and unbearably damp, and because of the nature of the water they would also have a stench. Moreover, it is necessary to take into account the heat and sweat exuded by dozens if not hundreds of people located in a closed space at one and the same time. These circumstances explain the abundance of openings and windows in the baths complex at Hammat Gader; some of them can be identified from the remains and others can only be conjectured.

The western facade of the complex is replete with windows (and was thus termed by us "the Wall of Windows"). In Area C, the space between the piers (W6) is closed off by walls up to a certain height but not to the top of the vault. Such is also the case in Area B, where W8 does not block the vault but leaves an opening for light and air. W4, the western wall of Area A, contains a number of windows, both on the "ground floor" and in the vault. The lower, funnel-shaped openings were undoubtedly windows and were not used for passage, even if they were large enough to serve this purpose. The two side windows of the semicircular alcoves did not allow a significant amount of light to enter but probably provided good ventilation. The large central window, in contrast, served as an excellent source of light. Above these two semicircular alcoves were windows, of which very little remains. Their shape is not clear because of the poor state of preservation; however, they cut into the semidome that formed part of the hall's roofing.

It is conceivable that there were openings for light in the domes (for example, above the spring) and vaults (Areas A and G, and elsewhere), and undoubtedly one of the functions of the large number of doorways was to permit the entry of air and light, and not just people. For example, the five

openings in W73 and the two openings in W85, in the southern wing of Area D, were more than adequate for the movement of people in this part of the baths.

Were there windowpanes? If so, how were they installed, and what were their dimensions?

Regarding the first question, the answer is affirmative, as we have physical evidence of the presence of glass panes. On the floor of the pool in Area B (Passage Rooms), a sheet of glass measuring ca. 0.2×0.2 m was found (Fig. 11). There

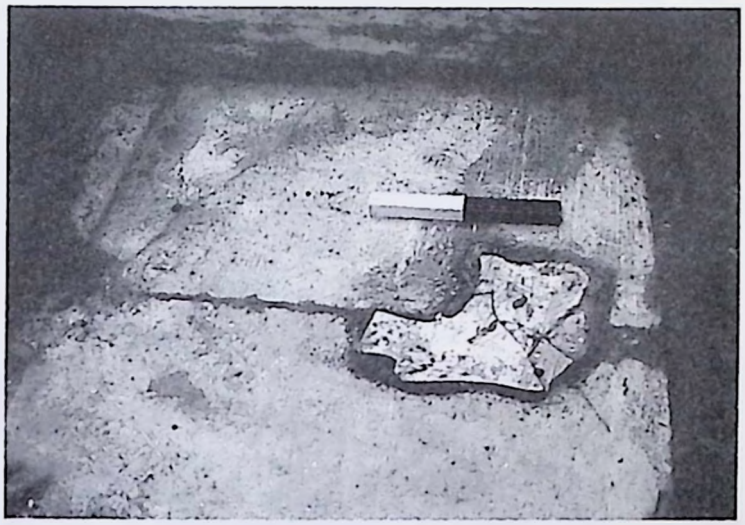


Fig. 11. Fragment of a windowpane on the floor of the pool in Area B (passage rooms).

is no doubt that this glass is not part of a vessel but rather a fragment of a windowpane. We have no additional data regarding the sizes of windowpanes, but they certainly were not big. It is therefore clear that large windows were divided into many small sections by frames made of delicate stucco. Several pieces of windowpanes still set in the plaster of a frame were found in the pool of Area B (Fig. 12). The windowpanes are 2 mm thick, practically transparent, and have a greenish hue. The stucco of the frame is thick, extending up to 3 cm on each side of the glass.

Additional evidence regarding the shape of the windows and the way the glass was set was found in the rare remains of two double windows in Area D, in the two northern alcoves of W13. Each of these windows is 1.47 m wide and divided vertically into two by a central column having a fairly intricate section (Fig. 13), thus creating two openings having

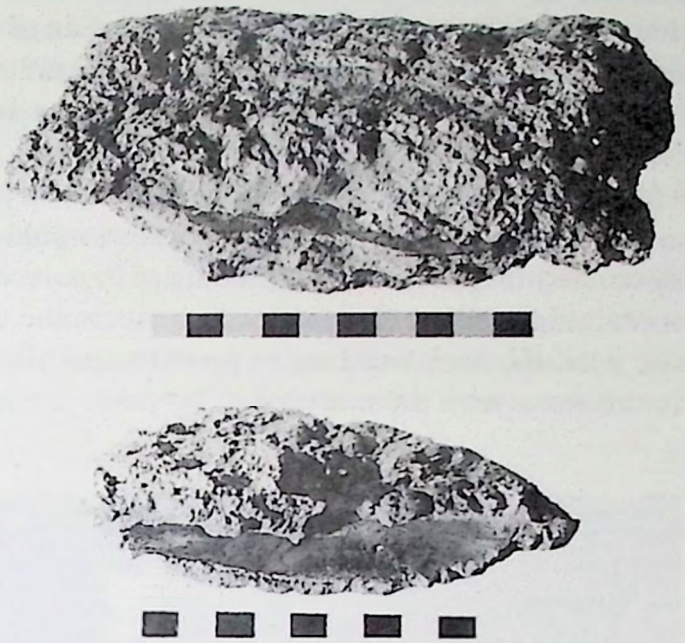


Fig. 12. Fragments of windowpanes set in a stucco frame found in the pool of Area B (Passage Rooms).



Fig. 13. The southern double window in the wall (W13) between Areas D and E, looking southwest.

a width of 0.55 m each. From the grooves in the sidewalls of the openings and on either side of the central column, and from the height of the column (which was composed of two drums), we may conclude that four panes of glass measuring ca. 0.55×0.45 m were set in the double windows (two in each opening) and that these windows could not be opened (Fig. 14). The fragments of lime mortar containing a sheet of glass lead us to assume that the windowpanes were set in grooves and affixed to the stone with the mortar.

specification with which one should concern himself when paving a street is durability in the face of wear due to extensive traffic by both pedestrians, carriages, and animals. In order to meet this specification, the hardest stone at Hammat Gader was chosen, i.e., basalt.

The visible section of the street covers a strip, ca. 28 m long and ca. 9 m wide, that is divided into two, one part lying opposite one of the two northern entrances to the baths, between W91 and W92. This was possibly a square in front of the entrance or a

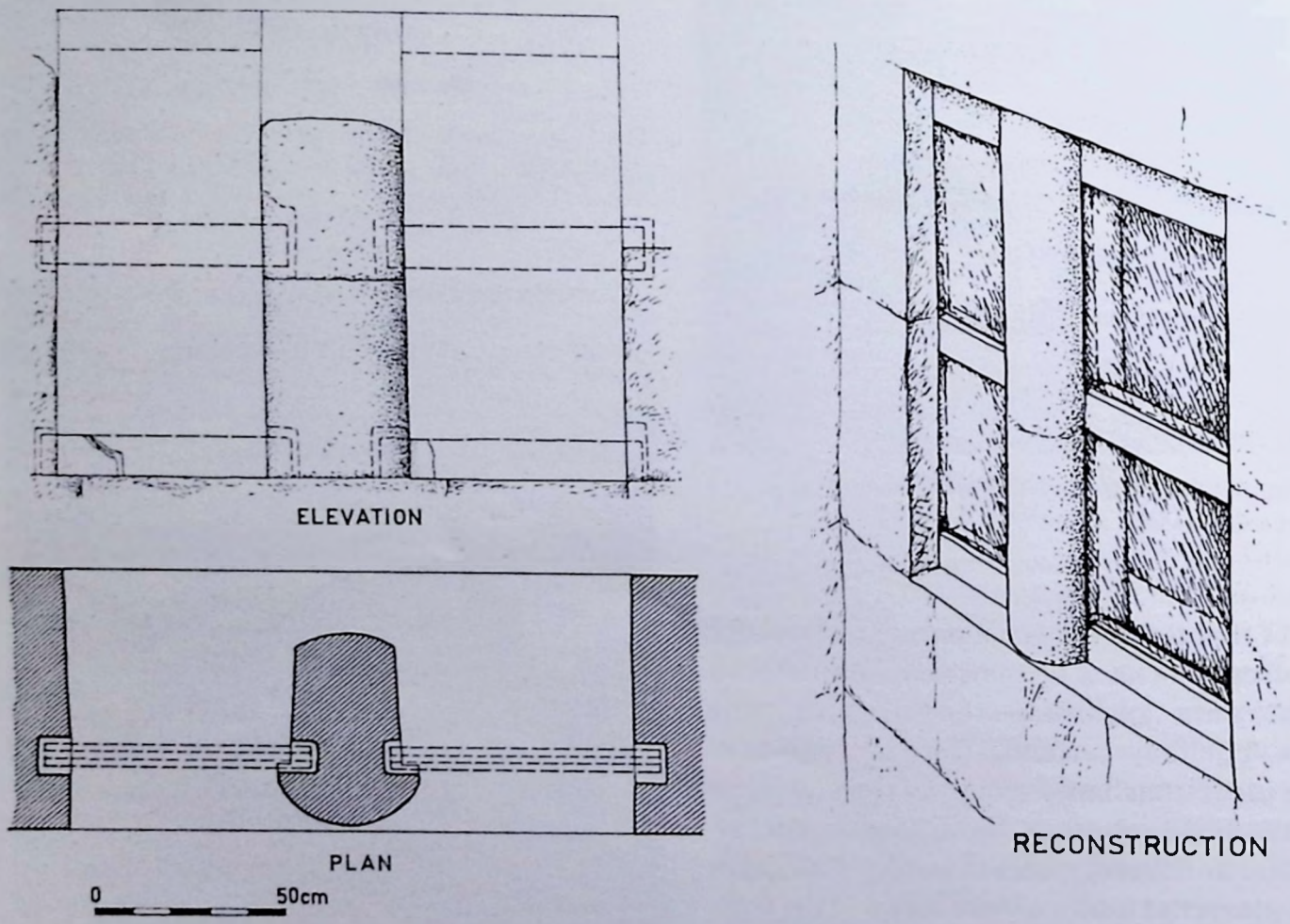


Fig. 14. Plan, cross section, and reconstruction of one of the double windows in W13.

Pavements and Floors – Although our discussion will focus on the floors inside the baths complex, we shall also include the various paved areas outside the building. The largest pavement outside the building occupies a broad strip north of the baths; we do not know its full width, but it undoubtedly was a street. The most important widening of the street. The width of the basalt slabs in this street ranges from 0.25 m in the narrow strips to 0.4 m in the broad ones (with a small number of exceptions). The length of the pavement slabs generally ranges between 0.45 m and 0.65 m.

The paved "square" opposite the entrance slopes markedly and apparently conforms to the natural

terrain. Along a street section measuring ca. 10 m in length, descending from west to east, the difference in height from end to end is ca. 1.5 m, i.e., an incline of 15%.

Another section, measuring ca. 18 m in length, is paved with a herringbone pattern, i.e., the strips of pavement are laid diagonally to the axis of symmetry extending along the length of the street. The axis runs parallel to the northern wall (W90) of the baths building, at a distance of ca. 5.5 m to the north of it. We may conclude from this that the entire street was at least 11 m wide, a dimension approximating that of other main streets. The street has a gentle slope which was apparently adapted to the baths building. A section of the street underwent repair.

Another paved area outside the baths complex was discovered in a building west of Area F. A superficial probe was conducted here, but failed to clarify the purpose of the structure; we can only remark that it was partially paved with a colorful mosaic featuring a scale pattern (Fig. 15). We may assume that the mosaic floor here was part of a private dwelling.

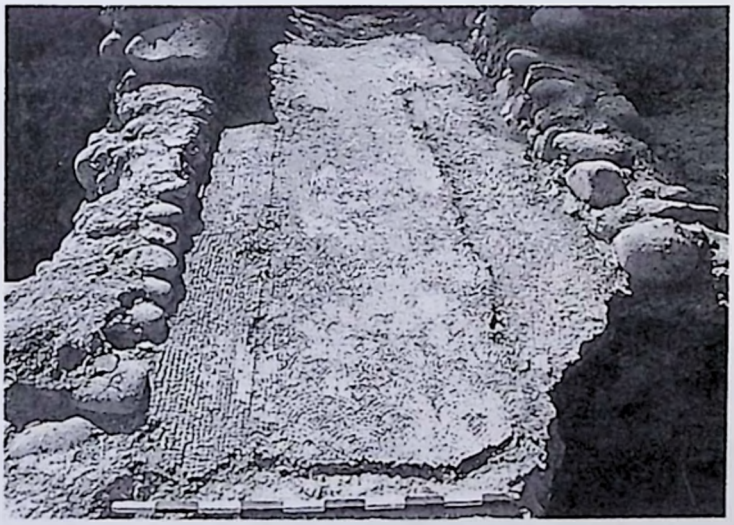


Fig. 15. Mosaic floor in the residential area west of the baths (Area F), looking south.

Inside the baths building, most of the pavements are to be found in the pools and bathtubs, and the walkways surrounding them. In the halls containing bathing pools – and this is the function of the majority of them – most of the central part is reserved for a large pool. The remaining area, between the pool and the walls of the hall, served as a walkway. The alcoves in the halls usually contain bathtubs or small pools; all of the pools have steps or benches around the perimeter. All of the floors of the above-mentioned elements are usually clad with limestone, marble, and sometimes plaster.

During the first stage of the building the only parts that were not designated as bathing areas were the entrance corridor (Area H) and the eastern room of Area B. The entire entrance corridor is paved with basalt slabs (Fig. 16). Basalt is resistant to erosion and weathering. This inexpensive, local stone was used to pave both the street and the entrance corridor. Could its use indicate a specific function of the corridor?

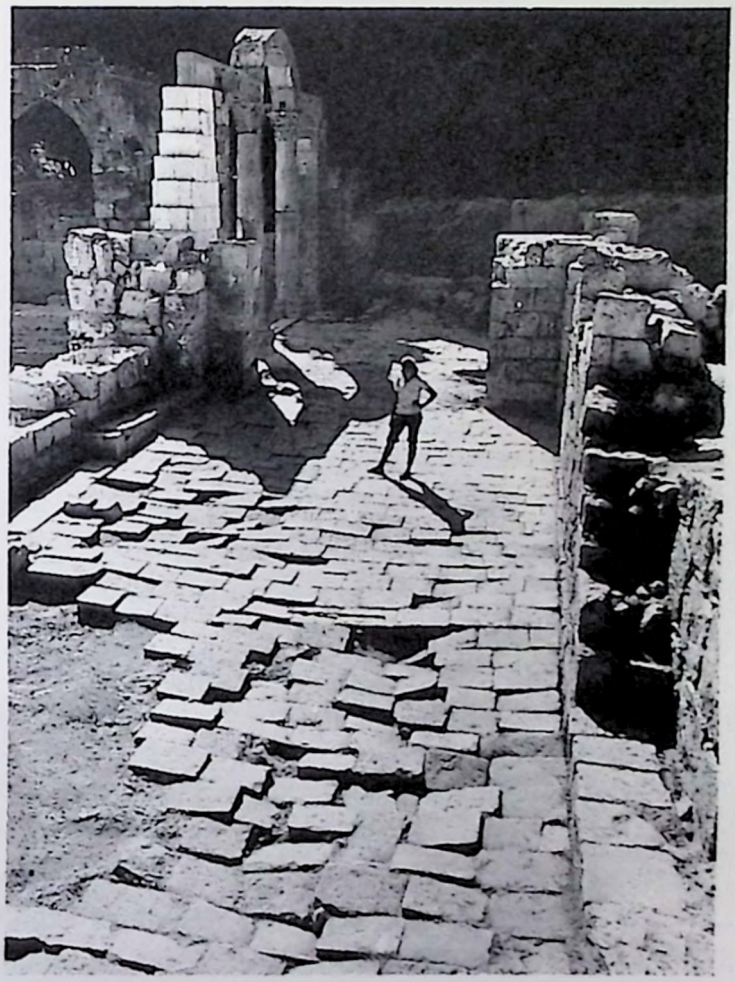


Fig. 16. Smoothened basalt slabs in the floor of the entrance corridor (Area H), looking west.

The entrance corridor is certainly part of the baths building and is located within the structure. However, the presence of a hard basalt pavement

may indicate that it was open to the sky, even though architectural units inside the building were generally roofed. It seems, therefore, that this area was part of the complex but had a function differing from that of the other rooms. Apparently this was part of a peripheral corridor through which the bathers passed on their way to the other parts of the complex; therefore, it was probably an area bustling with heavy traffic in all directions.

The floor itself is regular and well executed. The pavement strips, laid perpendicularly to the walls, are made up of well-worked slabs. The width of the strips ranges between 0.28 m and 0.35 m, and the length of the paving stones ranges between 0.3 m and 0.8 m.

Another paved section that is not a pool is the expanse that can be regarded as the western extension of Area H, north of the columned portal in Area C. Its long axis is a direct continuation of the corridor's long axis.

The floor of the expanse differs from any other pavement we found in the building. No doubt, the planners intended to create an impressive floor section here, the unique plan, materials, and execution of which contrasted sharply with the pavement in Area H. This *opus sectile* floor covered the entire area and was free of any installations. The floor is divided into a central section – a large square measuring ca. 3.9×3.9 m – with paved areas around it (Fig. 17). The entire pavement is composed of different types of marble slabs that give it the desired variety of shades of white, gray, and red. From the little that has survived east and west of the central carpet, it is clear that the pavement here was laid at an angle of 45° to the slabs in the square. These sections feature two shades of stone that created a checkerboard effect.

The areas north and south of the *opus sectile* carpet are paved with long marble slabs. Most of the floor is, indeed, missing, and the slabs of the central section, though completely shattered, have remained *in situ*. Perhaps this very fact is an indication of the building's excellent foundations, since otherwise fragments of these shattered slabs would have been loosened and scattered.



Fig. 17. Impressive floor made of colorful marble slabs (*opus sectile*) at the northern end of Area C (Hall of Piers), looking south. The floor decoration is aligned with the hall's long axis of symmetry.

The Pavement of the Pools – As a rule, two types of stones were used in the bathing halls – marble and local bituminous chalk ("bituminous stone"). The imported marble was generally used for walkways and for cladding benches, while the bituminous stone was employed for paving the floors of the pools themselves.

The type of stone chosen for a pavement or cladding was certainly related to its purpose in each locale. Walkways were meant to withstand the wear caused by the passage of thousands of pedestrians. In contrast, the pavement of the pools and bathtubs did not "suffer" from constant traffic, but had to be impervious primarily to the influence of water.

Another significant factor determined the choice of either type of paving stone: since a walkway was constantly visible and in direct contact with the

soles of feet, the aesthetic appearance and texture of its surface were very important. On the other hand, we can safely assume that the water in the pools was not very clear and thus the color and sheen of the floor's stones were of minor significance. Moreover, since the water showed the reflection of various elements in the building itself, the physical appearance of a pool floor was not very important.

The walkways were composed primarily of large marble slabs laid on a very hard foundation of variously sized river pebbles bonded with "mortar." It is noteworthy that, at a secondary stage, apparently as a result of daily wear and tear, it was deemed necessary to dress the surface of the marble slabs. This took the form of roughening by creating small depressions with a chisel in order to prevent bathers from slipping while walking on the smooth and wet surface.

The use of bituminous stone to pave the pools is most interesting. At the time of the excavations at Hammat Gader, the employment of this stone was thought to be rare, not only at Hammat Gader but also at sites throughout the country. We had no knowledge of it from excavators' descriptions or from other excavations and structures. Today, however, we are aware that this stone was widely used in the large baths at Beth Shean as well as in other structures there. The stone served primarily for paving pools and bathtubs, both at Hammat Gader and Beth Shean. At both of these sites secondary use was also made of it for walkways. Despite its excellent durability as a pool floor, in all cases where it was used for walkways the stone was worn away, cracked, and split.

The durability of the bituminous-stone floors in the various pools is extraordinary. Many of these pavements have survived completely intact; the stones themselves are well preserved and have an "almost new" appearance.

At least two explanations can be offered for the large-scale disappearance of marble pavements: burning in kilns for the manufacture of lime or reuse. It appears that bituminous stone was not suitable for these purposes.

When bituminous stone is laid on top of a hard, solid foundation (which is usually the case), it is difficult to disengage it from the foundation without breaking it. Thus, anyone wishing to make secondary use of this stone knew in advance that he would only be able to extract fragments but not complete slabs.

Bituminous stone was widely used both at Hammat Gader and Beth Shean, and certainly in other areas, for a number of reasons:

1. It was available in large quantities.
2. It is soft and easy to work. Like other soft building stones, it is also worked primarily by the "combing technique."
3. It is relatively easy to create large slabs without breakage.

The bituminous stone was not subjected to comprehensive scientific analysis in order to identify it and its origins; however, from the few tests that were carried out it is clear that it is rich in organic matter, which lends it its other qualities – softness for working as well as a light brown outer hue and a darker inner hue. No attempts were made to trace the provenance of the stone, but we may assume that the ancient quarries are not far away.

The pools in which bituminous stone was solely used are those in Areas A, B, and D. The pools in Areas C and G underwent modifications, repairs and repaving involving the complete or partial replacement of the stone.

Pavement of Area A. In contrast to the pavements of the walkways, which are largely missing, as well as repairs and replaced surfacing of benches, the floor of the pool has been preserved in its entirety. The floor stones are completely intact and have not undergone any horizontal shifting since the time the pool was built. Except for the addition of a small installation, and repairs at the joint with the lower bench, no alterations or repairs were made from the time the pool was installed.

The strips of the floor were laid almost perpendicular to the long walls of the hall. They are 0.5-0.65 m wide and the stones themselves, with a number of exceptions, range between 1.0 m and 1.5 m in length. The slabs were cut meticulously into rectangles, combed only on their upper face, and laid flush against each other.

The entire floor slopes downward from east to west, thus facilitating the draining and cleaning of the pool. In a small section of the pavement broken

by a falling vault block, we were able to dismantle carefully the floor and foundation stones (Fig. 18). The probe was carried out with pickaxes, crowbars, and sledge hammers, since the foundation was discovered to have a very massive casting that could not be penetrated by regular excavation equipment.

The foundation of the floor was built in accordance with the regulations for laying the foundations of roads, mosaics, and pavements in general. First a thick layer of large stones and mortar (*statumen*) is deposited. The next layer (*rudus*) consists of fragments of small stones and bonding material, and on top of this lies a relatively thin layer (*nucleus*) of mortar with some gravel; this level either serves as the bedding on which the pavement is laid or is topped by the bedding. The floor stones are laid on top of this "sandwich."

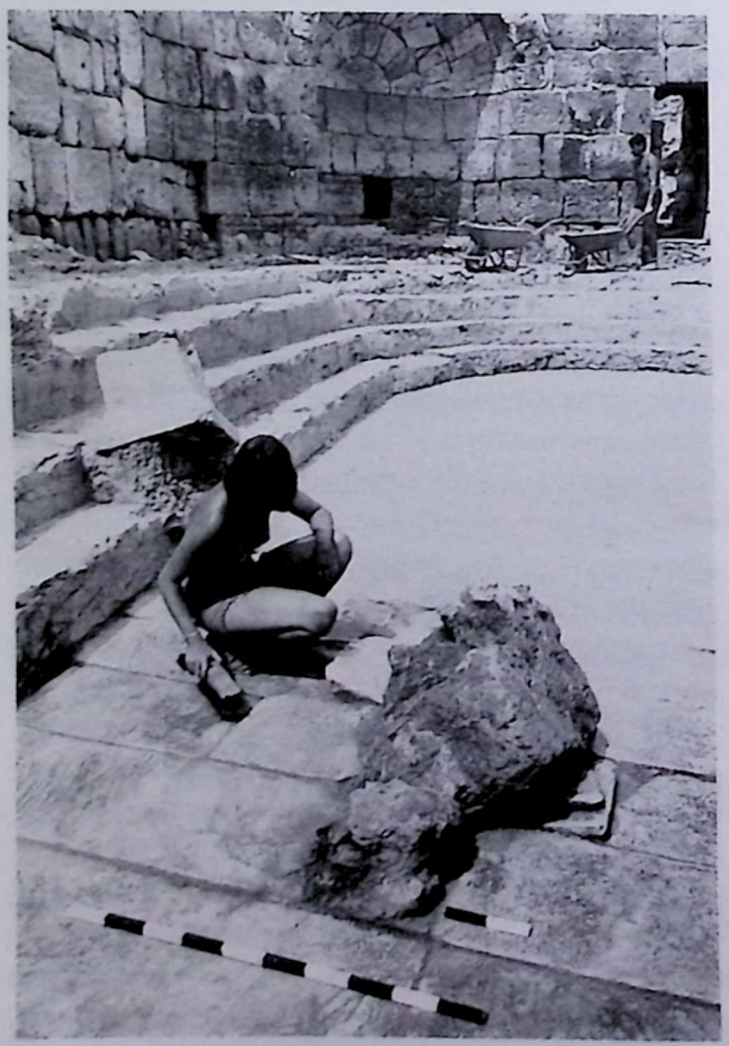
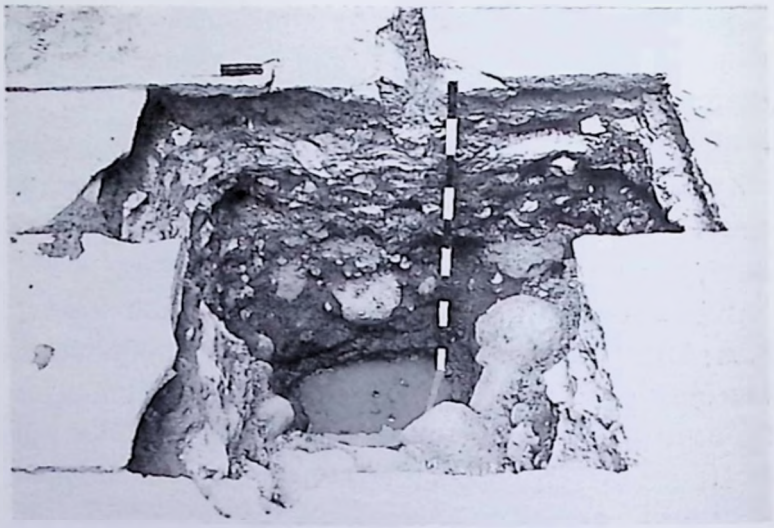


Fig. 18. Section of the ceiling vault in Area A (Oval Hall) that fell directly on the pool floor, looking east.

The probe we conducted beneath the floor (Fig. 19) revealed precisely these classic layers (from top to bottom):

1. floor stones – about 8 cm thick;
2. a composite layer of clay and ash-rich lime – 4 cm (*nucleus*);
3. a layer of small river pebbles mixed with mortar – 33 cm (*rudus*);
4. a composite layer of large stones (25 cm in diameter) and mortar – 45 cm (*statumen*).



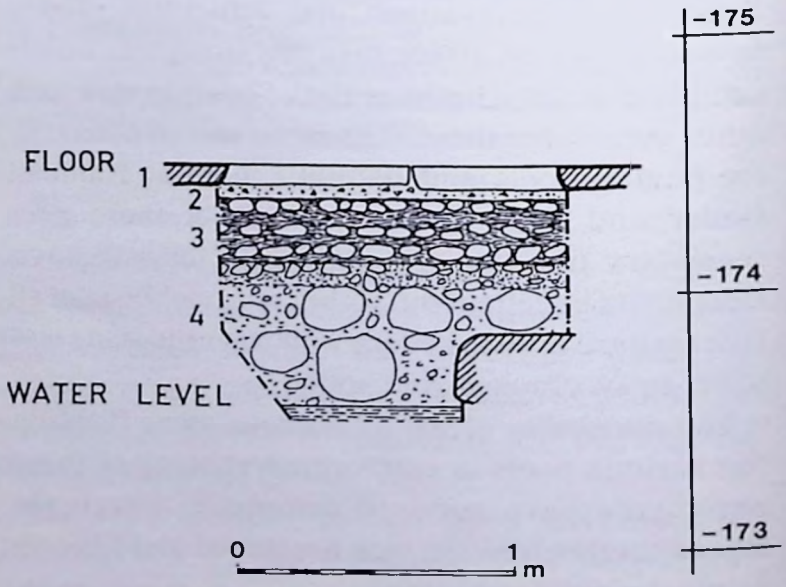


Fig. 19. Probe excavation in the foundation of the pool floor of Area A (Oval Hall).

In all, there were some 0.9 m of pavement foundation, a thickness that may well explain the excellent state of the floor's preservation.

Water was discovered ca. 1.0 m below the floor. This is not surprising, of course, since beyond W2

flows the spring. The entire hall was thus built on muddy ground, perhaps within a huge puddle, indicating the difficulties which the planners and builders had to overcome. Their know-how and technical capabilities have enabled the floor to survive in its entirety to the present day and the walls to remain crack-free, i.e., there was no sinking of the foundations.

Pavement of Area B. The pavement of the pool in Area B was also made of bituminous stone and is preserved in its entirety. It appears that this floor, like the one next to it in Area A, did not undergo any alterations or modifications since the time the building was erected. Most of the pavement is laid along the pool's long axis, i.e., parallel to its long walls, except for the stones adjacent to these walls, which were laid perpendicular to them. The width of the strips of pavement is 0.4-0.5 m and the average length of the slabs is ca. 0.8 m.

Pavement of Area D. Like the two pools described above, most of the pool (the central part and the southern wing) in Area D was paved with slabs of bituminous stone. The pavement was laid in strips perpendicular to the pool's long walls. However, the northern wing is paved with basalt slabs; we are unable to explain the reason for this. Moreover, there are no signs of repairs or later stages to which this part of the pavement can be attributed. Nowadays if we were to seek an explanation for the use of a different paving stone here, we might receive answers such as "the quarry was closed," "the supply was exhausted," disputes with the contractor, budgetary problems, etc. We may assume that problems of this type, which often influence decision-making in cooperative planning today, always existed, even when the Hammat Gader baths were being built. Without additional data we cannot substantiate any one of these suppositions. Surely, a transition from large slabs of soft stone to hard stone that is difficult to work, needs to be of greater thickness, and does not permit the use of slabs of the same size calls for some changes in construction methods. It is hard to believe that the decision to lay a different floor was a spontaneous one stemming neither from choice nor from preplanning. Apparently there must have been a good reason; otherwise we would not be discussing this single exceptional case.

Pavement of Area C. The area of this pool is paved irregularly (Fig. 20). It appears that the pavement was repaired or underwent alterations, although it is difficult to pinpoint an obvious reason for this. As in the case of the other pools in which the floor has been fully preserved, it seems that no natural cause can be held accountable for the destruction of a pavement so well executed. Since we cannot assume that the specifications for the laying of the floor of this pool differed from those adopted for the other pools, and also since no materials, other than water, that could cause damage to the floor were used, the only reasonable explanation is that an earlier floor was dismantled and replaced by a new one (use alone would not cause damage).

Not only are these irregularly laid stones of different types (though the majority are nevertheless bituminous stone), but many of them are



Fig. 20. Floor of the central pool of Area C (Hall of Piers), looking north. The fact that the pavement slabs do not match each other indicates that this is not the original floor.

broken, cracked, not worked precisely, fitted haphazardly to the surrounding stones, etc. On the other hand, there is no apparent loosening of the contact between the pavement and its foundation and even small fragments have remained in place.

It is possible that careful dismantling of the pavement sections could elucidate what happened here. Such an operation was not carried out and therefore we do not know why the original pavement was dismantled and the floor was repaved with stones in secondary use.

Pavement of Area G. The oval pool in this area shows two clear stages. In the first stage it was rectangular and in the second, oval. Each stage has its own pavement; however, the earlier pavement was not sufficiently studied, since its exposure would have called for the dismantling of the late floor.

This "late" floor of the second stage is typical of floors composed of reused materials; there is no uniformity in their laying, and use was made of materials of relatively poor quality. Repairs were made on this late floor during the historical periods when the building was still in use.

Unlike the situation in Area A, where the oval pool has a uniform pavement laid to its width, in Area G an effort was made to relate to the oval shape of the pool when designing the pavement. The central area formed an elongated rectangle cut into two by a strip of pavement, in the center of which a stone with an inscription was laid. The resulting two smaller rectangles were paved with small square stones laid in diagonal strips, at an angle of 45° to the rectangles' sides.

The pavement materials are diverse – part marble, part bituminous stone, and part hard limestone – all in secondary use. As noted, this pavement also suffered damages and was repaired sloppily with stone fragments of different types and sizes.

A small, excellently preserved, round pool paved with large bituminous stones was also exposed in Area G. The slabs are disproportionately large in relation to the small size of the pool. It appears that the original pavement slabs, of bituminous stone, were ordered in almost uniform sizes, no consideration being given to the dimensions of the floor in which they were to be fitted.

Pavement of Area E. This area is exceptional in all its details. It appears that in its first stages it had a pool that was later filled and covered by a new pavement, and, according to Inscription no. 1 in Area C, this hall was subsequently converted into a recreation hall.

The hall, which measures ca. 10.5×24.0 m, is divided into two: the southern part contains a pool which apparently was not surfaced with stone, but only with plaster. In contrast, the northern section was paved with smoothened and polished marble typical of walkway pavements. What make this area special are the huge slabs, the fact that a large number of them bear inscriptions, and their very preservation *in situ*, in contrast to the stripping of marble pavements in other parts of the complex. All these point to some special significance accorded this area.

The large marble slabs measure up to 1×2 m and were laid in strips perpendicular to the long walls. At some stage the floor underwent repairs; the northeastern corner was paved with basalt slabs while in other sections secondary use was made of fragments of a marble grille.

Bathtub Pavements. The bathtub pavements in the various areas are similar to the pavement of the round pool in Area G, where large slabs of bituminous stone were used despite the limited size of the floor. These pavements do not have any special characteristics that warrant a separate description.

Walkway Pavements. As mentioned above, the walkways around the pools were paved with relatively hard stone, especially marble. Either on account of wear or because of the removal of the marble slabs, few sections of such pavements have survived around the pool in Area C, very little in Area A, and only a few stones in Area G. In contrast, part of the pavement east of the pool in Area B is well preserved. This pavement, made of large marble slabs having a width of at least 0.6 m and a length of more than 1 m, is well preserved because it was covered by a later floor.

The pavement around the large pool in Area D is fairly well preserved. Two types of stone – marble and bitumen – were used here. Apparently, the floor was originally paved with marble only, as indicated by its southernmost section where

several large slabs have survived. The floor has a solid foundation composed of large pebbles mixed with very hard mortar. It appears that the floor required many repairs due to erosion and the lifting of the paving stones to repair pipelines running beneath it and to clean the peripheral drainage channel.

Since the pool in Area D was perhaps the most magnificent one, as attested by the fountains and the various inscriptions found in it, its walkway was designed accordingly. This pavement was divided into two: a broad section on which the public walked, and a narrower section serving basically as the rim of the pool, on which the fountains stood (Fig. 21). Between these two sections was a marble strip, ca. 8 cm wide, made of upright stone slabs sunk deep into the foundation. The strip's function was solely aesthetic. Most of the marble slabs in the pavement bore signs of later chiseling and roughening to prevent slippage.



Fig. 21. Pavement of the walkway east of the central pool of Area D (Hall of Fountains), looking north.

A section of well-preserved pavement was found in Area G, between the round pool and the spring. The marble slabs in this floor were chiseled to prevent slippage, and since they were covered with a thick layer of chalk deposits it is clear that the floor was wet most of the time and experienced heavy traffic.

Late Pavements. Many areas in the baths complex underwent functional modifications which required the laying of new floors at levels other than the original ones. The most significant late pavement, on account of both its location and functional modification, is that above the pool in Area C. The pool was eliminated, filled with earth, and its area repaved, probably during the fifth century (Phase II). At the same time, the bathtubs between the piers were filled and repaved.

The pavement was made of square slabs of marble and bituminous stone. The two types of stone were laid alternately, creating a checkerboard pattern. As in every other locality at the site where this design appears, the slabs were laid at an angle of 45° to the walls of the hall, and not perpendicular to them. Since the late floor was laid on a fill, in disregard of the "classical" specifications of successive layers and mortar, a significant degree of sinking occurred toward the center of the former pool.

Additional sections of late pavement were preserved in all the rectangular alcoves in Area D. The original bathtubs in these alcoves were filled, the areas were repaved, usually with a checkerboard pattern, and benches were built along the walls. Only the semicircular alcoves were differently repaved, slabs of bituminous stone in secondary use being laid haphazardly.

Other Pavements. So far we have discussed the use of slabs of basalt, bituminous stone, marble, and hard limestone. There was very limited use of plastered pavement. Such a pavement apparently formed the entire floor of the pool in Area E (mentioned above). However, we also found walkway pavements of a later period which were made of lime mixtures. Such a section is located in the passageway through W3, leading from Area A to Area D. It is difficult to explain why what would nowadays be termed a "granolith floor" was laid here. It is composed of a layer of slaked lime mixed with large quantities of small river pebbles. The lime surface has been worn away, revealing what appears to be a mosaic of scattered pebbles. This floor is from a very late (probably Umayyad) stage of the building.

Surfacing, Cladding – In this section we shall survey the walls of pools and bathtubs as well as of the halls themselves. As a rule, bathtubs and pools

were clad with stone slabs. At times the surfacing was of plaster, but this was usually used in stages of repair. The interesting technical aspect of stone cladding is not the material itself but its application and the various methods used to hold it in place.

Cladding stones, i.e., large and relatively thin slabs, do not penetrate the core of the wall and tend to peel and fall off the wall at some stage. There are two methods for preventing the loosening of stone cladding, and both of them were employed at Hammat Gader. One method calls for maximal roughening of the back of the stone slab, and the other is affixing the slab to the wall by mechanical means.

Since by its very nature the slab of cladding is relatively thin, the degree of roughening is limited as it is not possible to make deep depressions and prominent protrusions. It is clear, though, that roughening the rear surface allowed for better adhesion of the slab to the wall due a certain degree of penetration of the slab into the mortar behind it.

An interesting method, evidence of which has been preserved at Hammat Gader, is the attachment of the slabs to the wall with copper clamps. Such clamps were found in the cladding of the pool in Area B and that of the bathtubs in the alcoves of Area A; the finest example is in the parapet of the bathtub in Area E. In other places the cladding itself has not survived, but holes in the wall contain pieces of a copper clamp (Adam 1988: 247-248).

We know of two types of clamps that were used at Hammat Gader, one for joining slabs of cladding in the pools to the wall behind them, and the other for attaching stone cladding to the steps of a pool. The first type was anchored in the stone wall by inserting it into a small square hole and securing it with mortar and a small marble fragment. The slabs of cladding found attached to the wall by clamps in the side bathtubs of Area A are an example of this (Fig. 22). The clamp itself is ca. 1 cm wide and ca. 0.3 cm thick, its length being dependent on the thickness of the cladding (8-10 cm). In order to join slabs of cladding, the clamp is inserted in the gap between two slabs. Its split ends are bent and each one clamps on to a slab.

The second type, which is familiar to us from the parapet in the bathtub of Area E, is anchored on one side to the core of the parapet, while the other side, which is pointed, is bent and inserted into a hole in the slab of cladding (Fig. 23). All this is covered by the horizontal slab of the parapet. Similar methods are used in modern architecture for hanging marble cladding on cast walls.

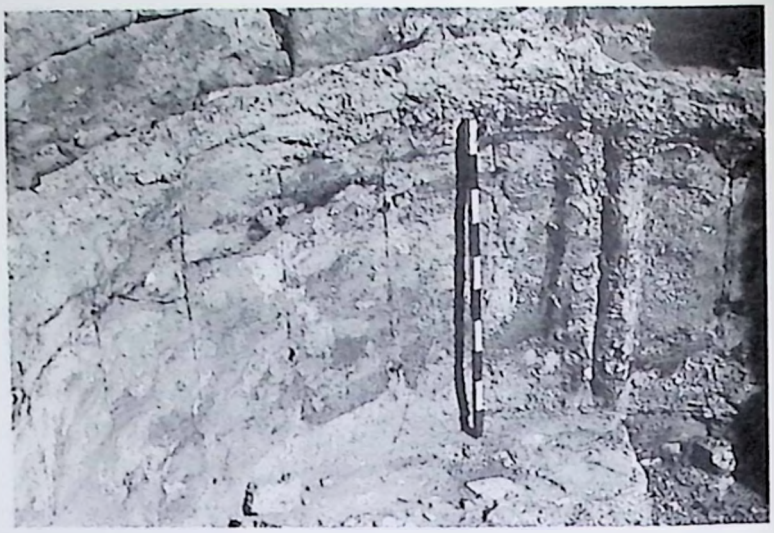


Fig. 22. Vertical slabs of cladding in the bathtub in the northeastern alcove of Area A (Oval Hall), looking east. Note the bronze clamps connecting the slabs.

Plaster and Wall Mosaics. Despite the fact that the original surfacing of the building's walls has not survived, it is evident that the walls were plastered, clad, and then decorated. Only in a few places were patches of plaster found that could point to the appearance of the building's interior. In some localities only an underlayer of the plaster has survived, attesting to the actual plastering but not to the finishing.

The most significant section of plaster was discovered on the northern pier of W7 in Area C (Fig. 24). It is larger than the others and is also preserved in its full thickness. Many coats are visible, some of plaster and others of whitewash. The original plaster was applied in layers: the first layer penetrates the joints between the stones and creates a roughly leveled surface; the second, more delicate, layer, creates a plane, usually with grooves to which the very thin top layer, usually of pure slaked lime, can adhere. The underlayers are also composed of lime and usually contain a pozzolanic additive. Since they lack sufficient contact with the air, this additive, which is composed of crushed pottery or volcanic sand, helps them to harden. The other method ensuring

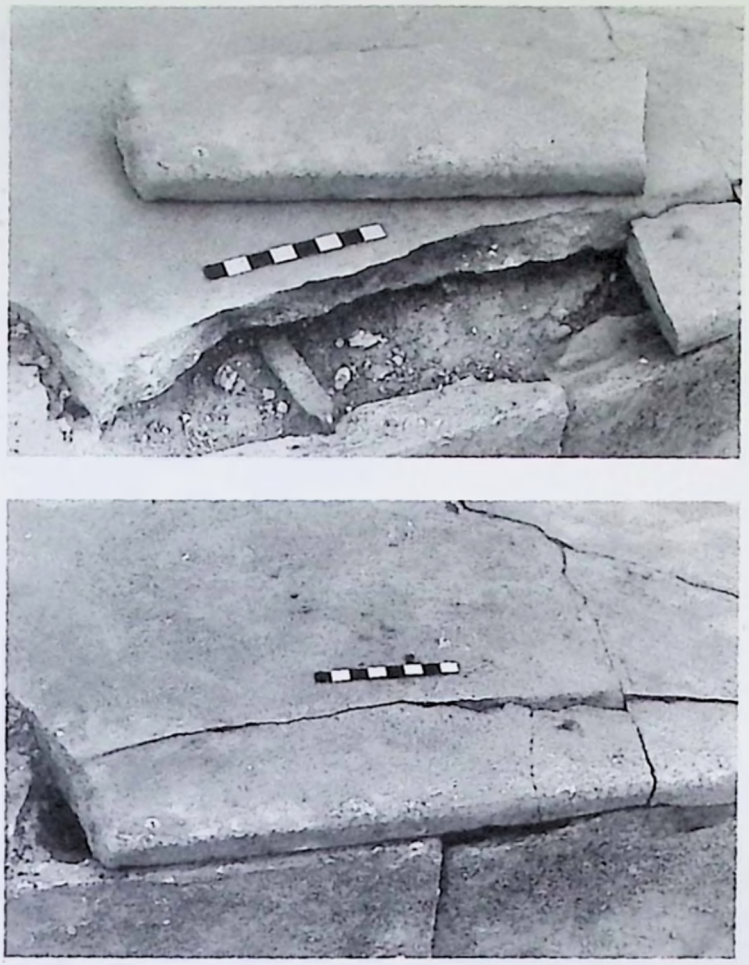


Fig. 23. Marble cladding of the bathtub parapet set between the two western piers of Area E (Hall of Inscriptions). Note the bronze clamp found *in situ*.



Fig. 24. Layers of thick plaster covering the northern pier in the eastern row (W7) of Area C (Hall of Piers), looking north.

hardening of the plaster is its application in thin sublayers.

Since contact with the air is important for hardening the lime mixture, the thicker the layer the slower the hardening of the one beneath it. Consequently, much work is required to create many thin layers of plaster. Such layers should not to be viewed as historical stages or stages of renovation, unless there is proof of this (such as paint and drawings on the lower layers).

Patches of the top layer revealed *in situ* on the pier in Area C are decorated; however, due to the fragmentary preservation it is not possible to identify the motif. This layer also yielded a Greek inscription.

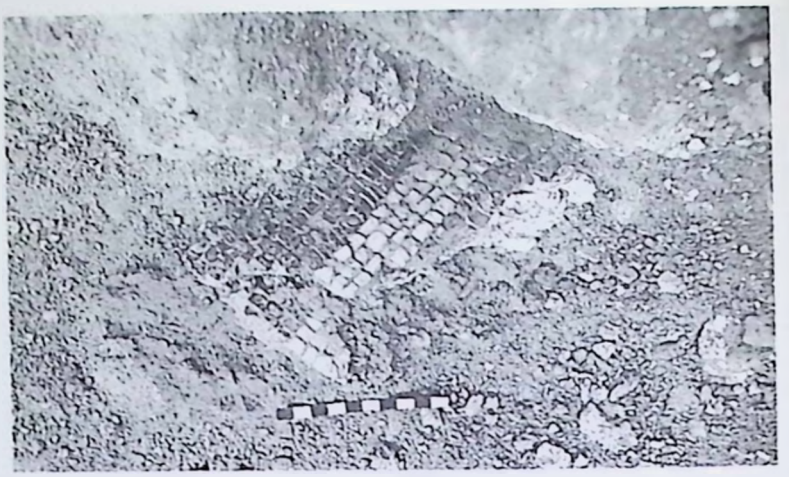
As part of the building's maintenance, the walls were whitewashed from time to time; each coat of whitewash would erase the drawings and decorations on the previous layer. Consequently, the walls would be redecorated each time. Proof of this may be found in the consecutive coats of decorated whitewash.

In the southern apsidal room linking Areas E and D, a fairly large plastered section was revealed. One of the plaster layers features dark spots due to the incorporation of tiny river pebbles (Fig. 25). It is not clear whether this was a top layer and the spots were a decorative element, or whether it was an underlayer in which the pebbles were inserted to roughen the surface and ensure good adhesion of the next layer. Remnants of plaster showing identical spots were also found in the adjacent apsidal room. Many patches of plaster were preserved on the walls of the benches by the pools and inside the alcoves in Area D.

Another decorative surfacing – glass mosaics – was discovered, not *in situ*, in several places in the building, especially in Areas C and E. Evidence of wall mosaics was found in the ruins, both in the form of scattered glass tesserae and as entire



Fig. 25. Unique plaster with tiny river pebbles, in the southern apsidal room of Area D (Hall of Fountains), looking east.



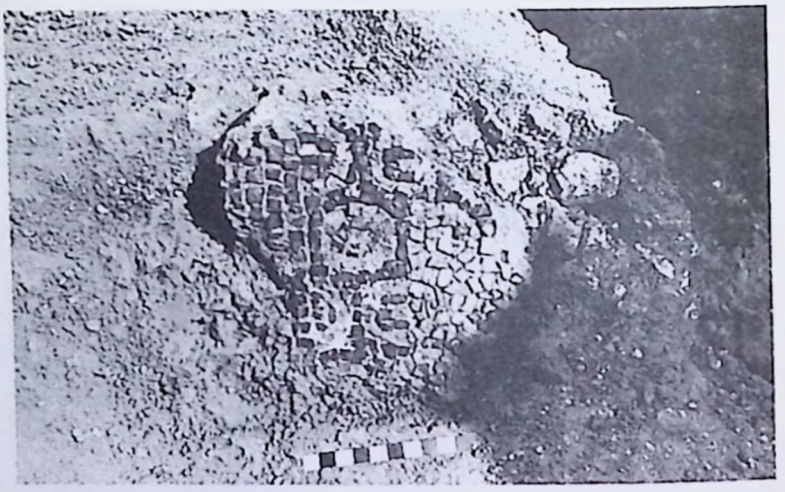


Fig. 26. Fragments of glass mosaics found in Area C (top photo) and Area E (bottom photo).

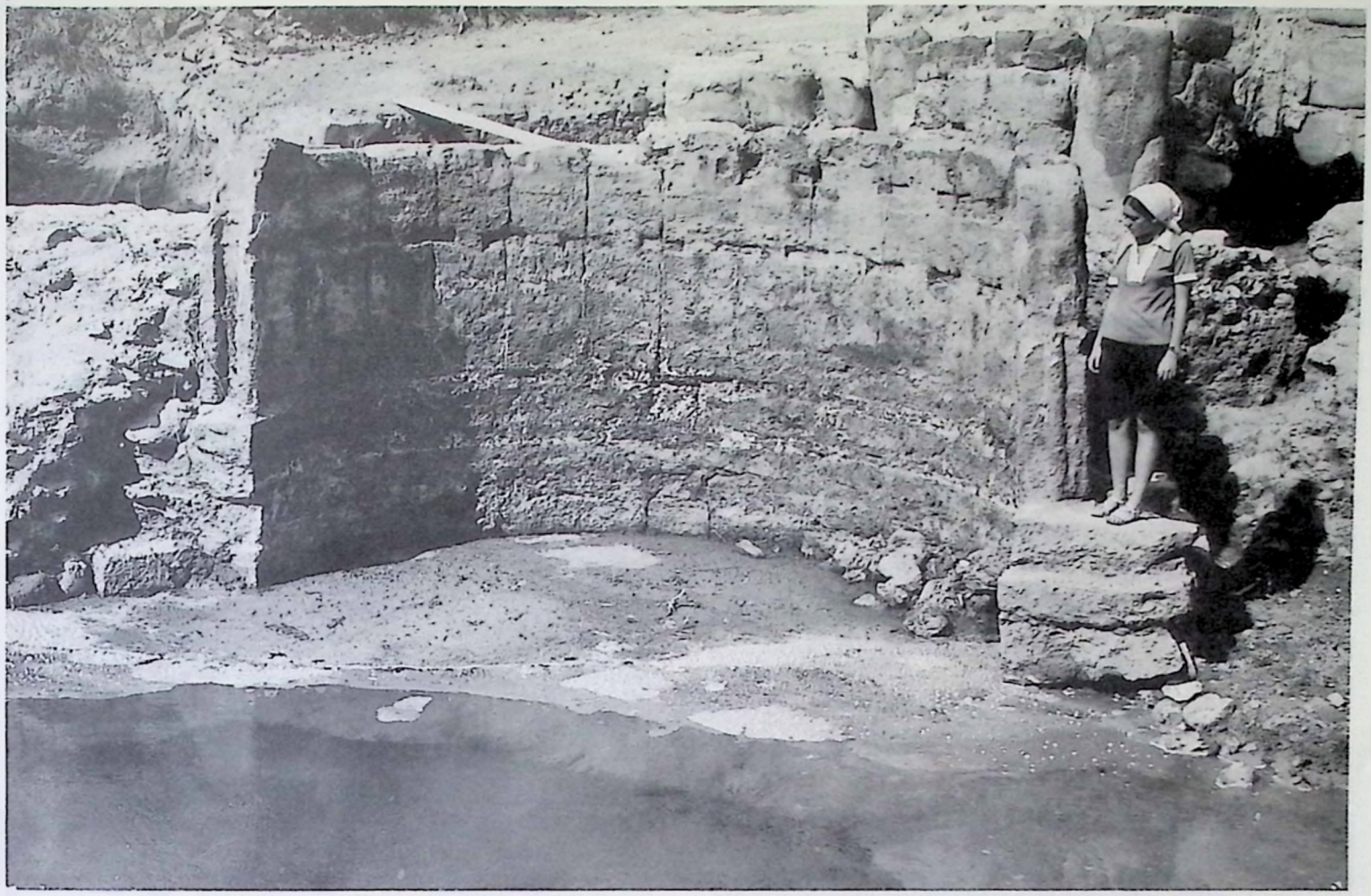
sections adhering to the masonry (Fig. 26). From the relatively few and fragmentary remains, one may only draw conclusions regarding the magnificence of the building's interior.

One of the most interesting parts of the glass mosaic is its marginal area, showing the transition from plaster to mosaic, which has a red coloration. Perhaps all the upper parts of the piers were plastered, while sections of the vaults were covered with mosaics. A close examination of the sections of these mosaics enabled us to comprehend the special technique used for incorporating the tesserae. The marble tesserae form an uneven surface while the glass tesserae are laid at a slight angle to the face of the walls. We assume that this was not by chance but intentional. The different angles of the tesserae surfaces were meant to reflect the sun rays penetrating the windows and to deflect the glare.

Special Installations – A complex structure such as a large baths complex, having various functions requiring technical solutions, contains an abundance of installations relating primarily to water. These installations are usually part of the system for conveying the water from point to point, filling and emptying the pools, providing special bathing facilities and structures for holding spring water, and regulating the flow in different directions, water pressure, etc.

One special installation, lacking any parallels to the best of our knowledge, is indeed related to the hot spring and is built into it. It appears that in the early stages of the baths complex, a rectangular pool was built around the spring. To the north and south of this pool, which was apparently roofed with a dome, two vaults were built, one having a span of 6.5 m and the other 7.0 m, and both having a depth of 4.0 m. From this pool the spring water entered the baths by gravitational flow (see below).

At a certain stage, perhaps as the result of an earthquake, it was probably concluded that the system was not efficient enough or did not lend itself to sufficient regulation, and a decision was taken to improve it by containing the spring within a special installation. The construction of the installation involved blocking most of the area where the water rushed in with a casting of large river pebbles and mortar, and leaving a round pool inside the casting. An exceptional technique was used in the construction of the latter pool which has



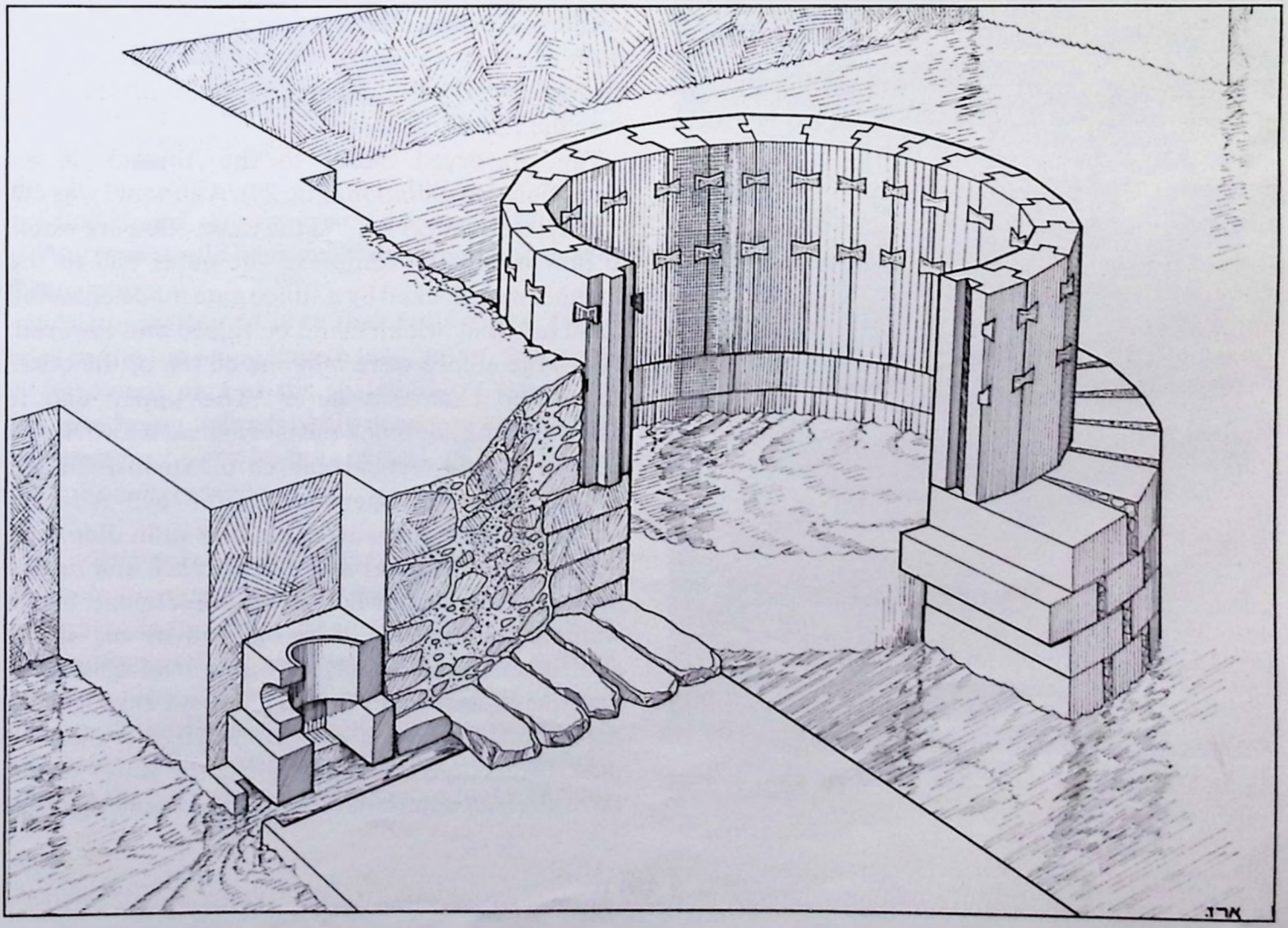


Fig. 27. The round elevating pool built around the spring, looking northwest. The round pool was built inside an earlier rectangular pool.

a diameter of ca. 4.0 m (Fig. 27). The spring was surrounded by a ringwall foundation, with an inner diameter of 4 m. It was ca. 0.9 m thick and built of at least three courses (Fig. 28). The stones were hewn only on the side facing the pool. On top of this foundation, tall stone slabs, each measuring ca. 1.8 m in height, were joined to one another to form a hollow cylinder, thus creating a closed tank. Since the stone tank was sensitive to movement in any direction, which could cause it to break and create an uncontrollable gush of spring water, the planners and builders made every effort to ensure the firm joining of the stones. First of all, a groove was cut along the full length of one of the narrow sides of each slab forming the cylinder, while the other side had a corresponding protrusion. The protrusion on one slab fitted perfectly into the groove of the stone next to it.

Once the cylinder had been created, these joints would theoretically prevent any horizontal movement of the stones. Only uplift or subsidence could cause dislodgment of the slabs. In order to prevent such movement, or any lateral shift in the case of a slight sinking of the foundations, the stones were also joined to each other with butterfly-shaped metal clamps. Eight grooves were cut at the edges of each slab, four on each face. When two slabs were joined together, each pair of adjacent grooves formed a recess in the shape of a butterfly. Butterfly-shaped bronze clamps were inserted into these recesses and welded in place with lead. In this way, every pair of slabs was joined by four butterflies, two on the exterior of the tank and two on its interior. The metal of these butterfly clamps was looted in the course of time, except for one "wing" that was found *in situ*. In addition to all these methods, we should bear in mind that the tank was coated with a thick layer of cement. Only the sinking of the foundations beneath the spring could cause the tank to disintegrate.



Fig. 28. The rear of the round elevating pool, looking southwest.

The tank required water outlets leading to the pools on the one hand and to the Yarmuk on the other hand. Blocking the outlet toward the Yarmuk would cause the water level in the tank to rise to the point of overflow. Since we found no outlet toward the pools, it is possible that the water indeed flowed over the rim of the tank.

The preserved outlet to the Yarmuk is an exceptional installation (Fig. 29). A channel was cut into the wall (W11) behind the tank, allowing water to flow out of the complex. The outer end of the channel was blocked by a sluice gate made of metal, wood or stone, which could be raised and lowered. Two large stones were laid one on top of the other above the channel's outlet. The upper one is basically a basalt block measuring ca. 0.8×0.8×0.6 m, with a round vertical hole, ca. 0.35 m in diameter, running from its upper to its lower face. A round horizontal hole, measuring ca. 0.28 m in diameter, was cut into the outer side of the block and linked up with the vertical hole. The lower stone had a water outlet that could be blocked by the sluice gate; when it was closed, the water level would rise and the excess water would flow out through the horizontal hole, which was ca. 0.8 m higher than the gate. If this hole too was plugged, the water would have risen an additional 0.4 m. If the upper opening



Fig. 29. Outlet for water surplus from the spring, looking north. Note the grooves of the sluice gate hewn on both sides of the outlet and the stone block with two round openings.

was also closed, the water would have had no outlet and the tank would have overflowed in the direction of the pools.

It is interesting to note that both of the round holes in the top stone have a lead lining, this being an important part of the installation's operation. The lead lining was probably designed to facilitate the rotation of a bronze plug of the type that existed in the Roman period.

Built Channels – Dozens of meters of built channels surround the baths and run through them. In most instances these channels have a rectangular or slightly trapezoidal cross section and are covered with flat slabs. Such channels run beneath the walkways around the pools in Areas A and D, along the western wall of the baths in Area F, and in the exits from and entrances to the various pools – linking Areas A and F, B and F, A and E, etc. The dimensions of the channels vary but they are usually ca. 1.0 m or more in height and 0.5 m or more in width. These dimensions were dictated not only by the amount of water the channel had to convey (the usual criterion determining the diameter of a pipe), but also by the need for maintenance and to fix the height of its bottom so that it would be at the right level for filling or draining the pools.

A built channel, exceptional in its dimensions and complexity, runs parallel to the entire length of the columned portal in Area C. It turns northward at the western corner of the portal and branches southward and eastward at its eastern corner. The section parallel to the columned portal consists of a channel, at least 2.0 m deep, built of hewn stones. At the point where it branches eastward, two tunnels with vaulted roofing were visible; however, we lack any additional data since excavation was not continued in this direction.

As we shall see below, cold water was fed into the baths primarily by pipes. Two basalt stones were found within the pool in Area B. One of them is fairly small and flat (dimensions: 0.44×0.58 m; thickness 0.18 m), and on its face were carved two intersecting channels (Fig. 30). The width of these

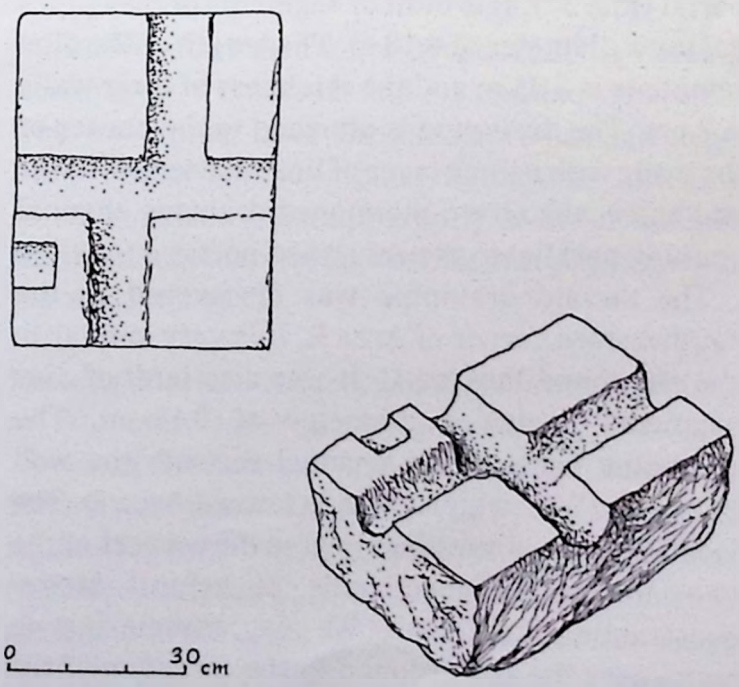


Fig. 30. Basalt stone found in the debris of Area B (passage rooms), apparently for housing intersecting lead pipes.

channels is 10 cm and they are 5.5 cm deep. It may be assumed that this stone was a foundation for the intersecting lead pipes found at the site. The other stone is a large basin, 0.57 m high, with an outer diameter of 0.47 m; its walls are 7 cm thick (Fig. 31). This basin probably served as a fountain somewhere in the baths.

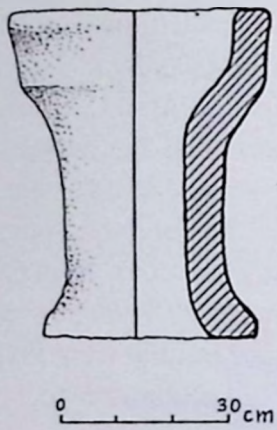


Fig. 31. Basalt basin used as part of a fountain, found in the debris sealing the pool in Area B (Passage Rooms).

Drainpipes – The remains of two drainpipes for draining rainwater from the roofs of the building were found in the excavations. One was located in Area C, next to the eastern pilaster of the columned portal (Fig. 32). It is built of segments of clay pipes having a diameter of 0.18 m. The length of the pipe segments is 0.33 m and the thickness of their walls is 2 cm. The drainpipe is attached to the corner of the walls with a thick layer of lime mortar. Its lower end enters the above-mentioned drainage channel running parallel to the columned portal.

The second drainpipe was discovered in the southeastern corner of Area E. It is very similar to the one found in Area C. It was also built of clay segments having a diameter of 0.18 m. The drainpipe leads to the channel through the wall behind it (W1), which extends toward Area D. The location of the drainpipes next to the corners of the two above-mentioned halls is helpful in reconstructing their roofs. We may assume that in both cases the roofs sloped in the direction of the corner in which the drainpipe was found. The installation of the drainpipes inside the building and not on the outer faces of the exterior walls was made possible by the existence of the channels that drained the rainwater from the building.

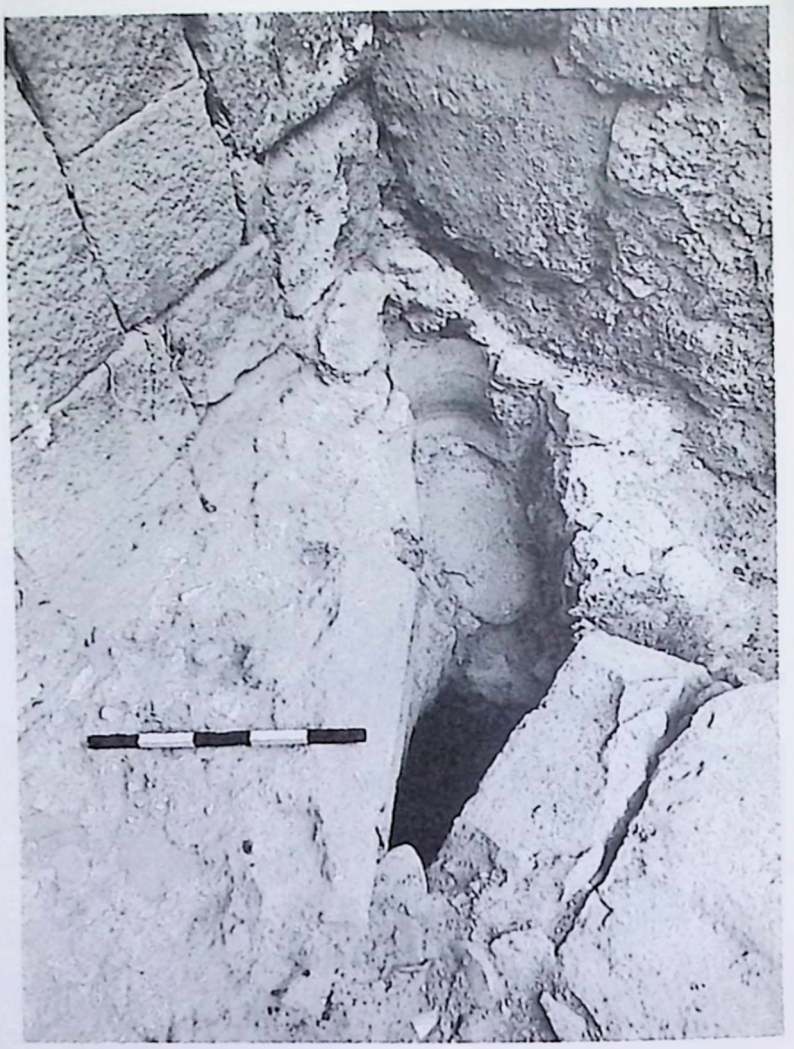


Fig. 32. Drainpipe made of clay segments leading into a drainage channel in Area C (Hall of Piers), looking southeast.

VARIOUS CONSTRUCTION MATERIALS

Bricks. Bricks were not widely used in the construction of the Hammat Gader baths. This building material was employed only in the small pools or bathtubs. For example, the walls of the tubs between the piers in Area C were built of bricks. These bricks, measuring 0.12×0.22 m×4 cm, were then coated with plaster (Fig. 33). Bricks of the same dimensions were also used for building the wall of the bathtub in the southeastern alcove in Area A. Here, too, they were coated with plaster. The only pool that was built entirely of bricks is the round pool at the southern end of Area G.



Fig. 33. Side of the northernmost of the three bathtubs in Area C (Hall of Piers), looking west. Note the use of clay bricks.

At a very late stage, a small brick bathtub was installed in the northeastern corner of Area B, at the junction between W5 and W9. The bricks in this tub's wall are rectangular and measure 0.12×0.25 m×3.5 cm. They were laid as stretchers and bonded with a grayish-white lime mortar. The advantage of bricks over stone is their great resistance to heat and their relatively good insulating properties. This is why they were a preferred material for constructing the columns of hypocausts in regular bathhouses.

Rooftiles. During the excavation of the baths building, we found the remains of several tiles that once covered part of the roof. The rooftiles are of the regular type used in the Roman-Byzantine period. Some of them are flat (*tegulae*) and others are convex (*imbrices*). They are made of light brown clay (Fig. 34). The thickness of the flat rooftiles was 1.5 cm. A convex rooftile preserved intact measures 22 cm in length, its outer diameter is 13 cm, and it is only 1.2 cm thick. Fragments of rooftiles found in the excavations are smooth and bear no imprints, except for the fingerprints of a rooftile maker.

Wood. We know little about the use of wood in the building since virtually no remains of this material were found; however, we may conjecture where use was made of it. Part of a casting-mold made of wooden boards was revealed in the spring. Within the ruined southern wall (W61) of the pool around the spring was a row of wooden boards. We removed one of the boards from the water; it is the only evidence at the site of the existence of wood intended for construction purposes. Undoubtedly, this is a worked wooden board that was used as part of a mold for casting mortar foundations in the water of the spring. Unlike casting in earth, where a trench can be dug and cast without a mold, in water one must create a dry trench with wooden boards.

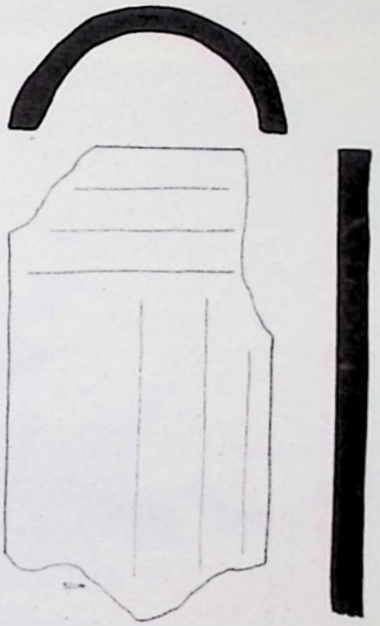


Fig. 34. Fragment of a rooftile found in Area C (Hall of Piers).

The wooden board we removed from the water is 26 cm long, 6 cm wide, and 5.2 cm thick (Fig. 35). The wood must have shrunk somewhat and these are probably not the original dimensions. Remains of nails or iron rods, apparently used for holding the mold together during casting, were not found in the wooden boards.

Masons' Marks – A survey of masons' marks found at Hammat Gader was conducted by Nili and Abraham Greitzer on November 6, 1993. A total of 368 masons' marks are preserved in various places in the building. The frequency of the marks was recorded in Areas C, A, B, D, F, and H. Marks were not found in the other areas, apparently because of the high degree of erosion of the walls (especially in Area G).

The examples presented here are an incomplete sample and indicate the abundance of masons'

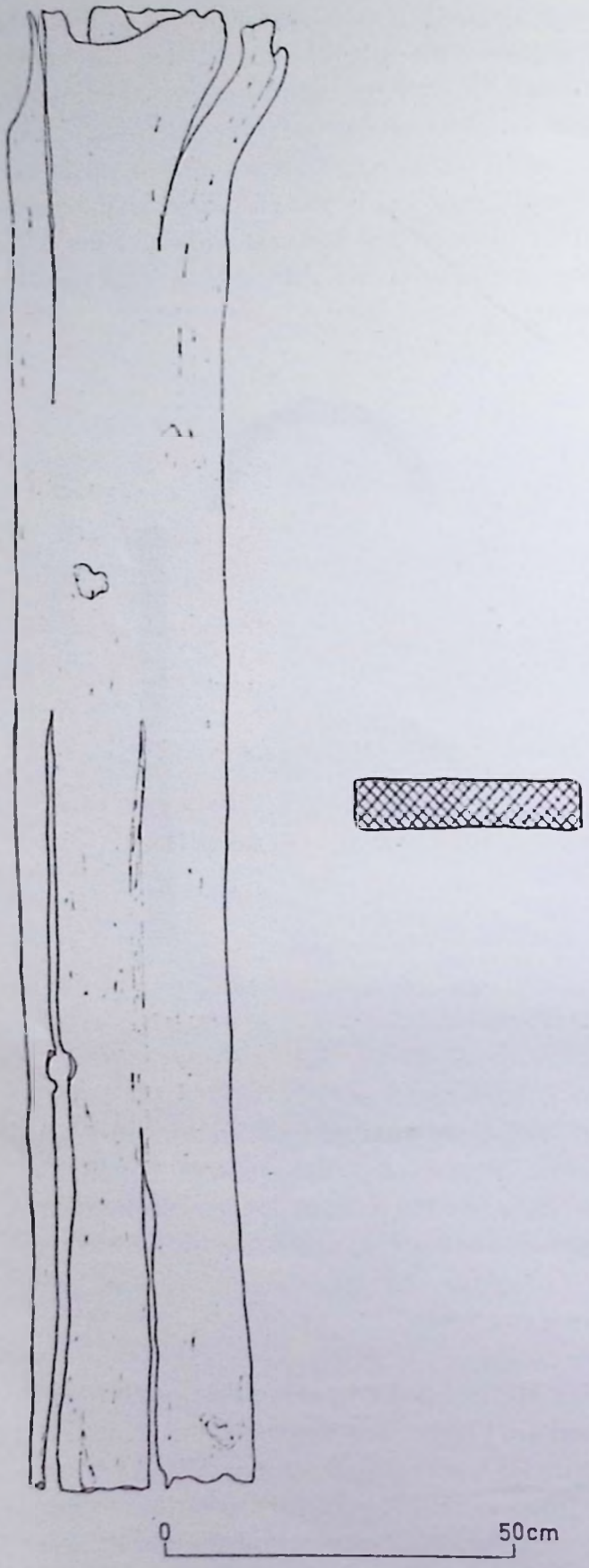


Fig. 35. Fragment of a wooden board found in the Roman elevating pool (Area G).

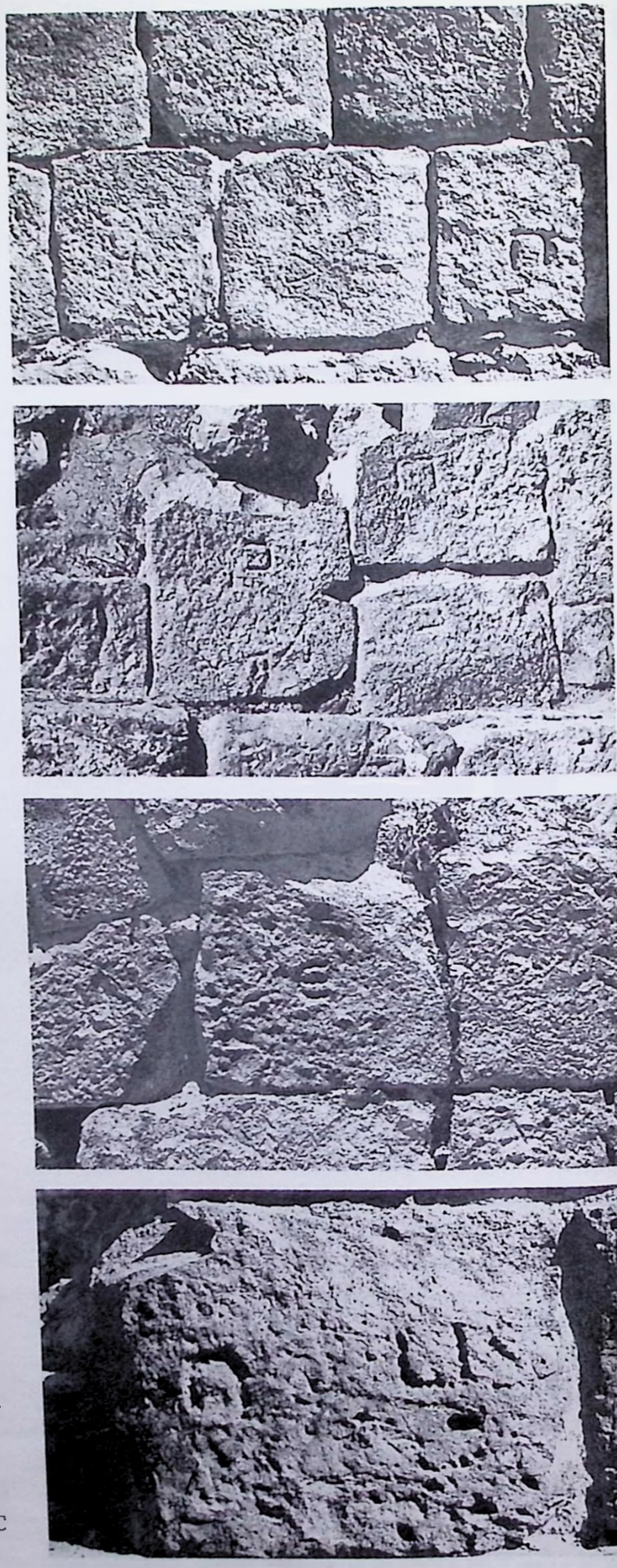


Fig. 36. Various masons' marks found on the walls in Area C (Hall of Piers).

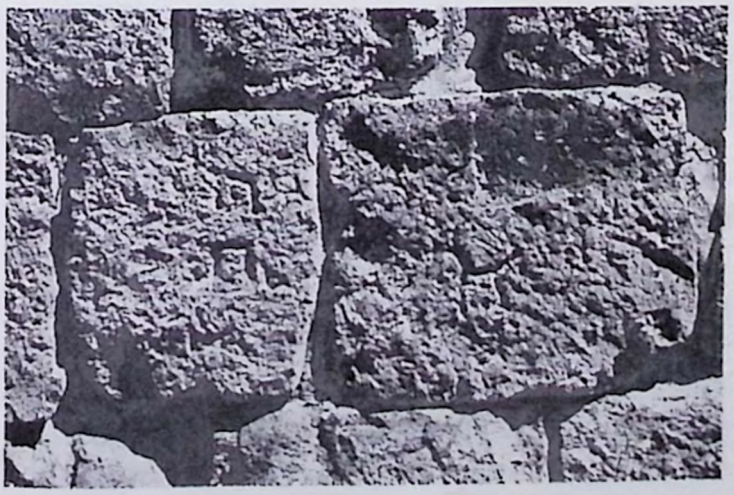












marks found at the site. The clearest and most numerous marks are preserved in Area C (Fig. 36). In the hall built of limestone (Area D), only two masons' marks were found. One of them was painted on the stone in red in the shape of the letter B and the other is an X-shaped incision cut into the stone (Fig. 37). It appears that most of the limestone blocks used to construct the hall were marked with paint which is not well preserved. It is possible, however, that many of the marks were made on the concealed side of the stones.

Many masons' marks were found along the building's western facade (Area F) and the northern walls facing the entrance area (Area H). They also appear on some of the decorated architectural elements, such as one of the two capitals of the columned portal, the upper end of which was incised with a masons' mark in the form of a capital Greek *alpha* (Fig. 38). In this context, we should note that manufacturers' marks were also found on the lead pipes of the baths' water supply system (see below).

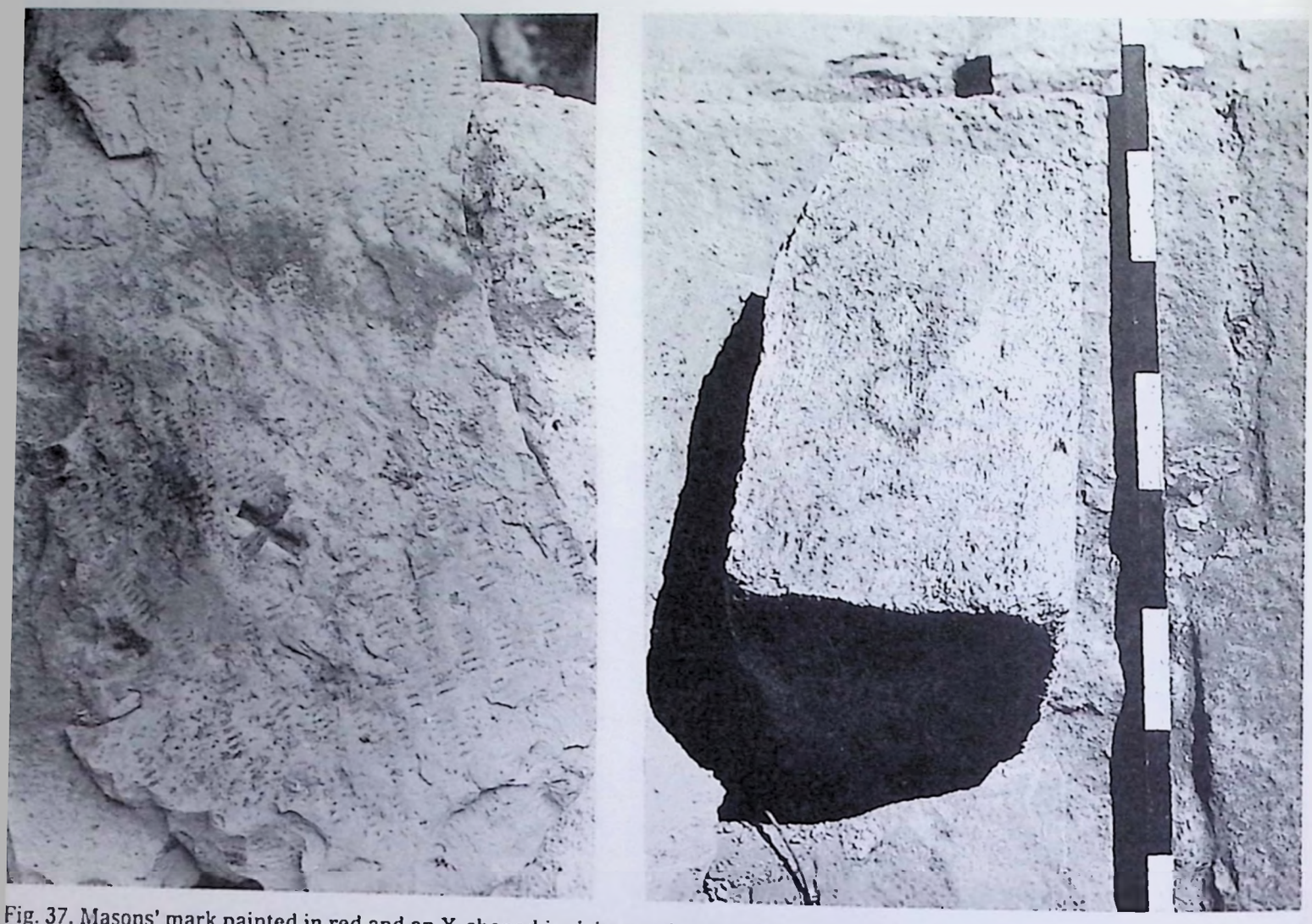


Fig. 37. Masons' mark painted in red and an X-shaped incision on dressed limestones in Area D (Hall of Fountains).



Fig. 38. One of the two capitals of the columned portal. Note the masons' mark engraved at its upper end.

It is clear that masons' marks were widely used in the baths complex. Moreover, we must refrain from drawing any statistical conclusions regarding the frequency of their occurrence. Several of the walls were destroyed and rebuilt in different periods and the source of stones in them cannot be determined conclusively. Moreover, we must take into consideration various errors in the identification of these marks, which may derive from the stones' state of preservation, plastering that covered part of the marks, deceptive lighting angles, etc.

Fifty different types of masons' marks were recorded. Most of them are letters of the Greek alphabet or variations of them, i.e., combinations of letters, letters written backwards, the addition of a period, repetition, the addition of a line to a letter, etc. Other marks are arbitrary geometric shapes. The average length of the marks is 8–10 cm and their average height is 5–8 cm. The average depth of the incision is 4–5 mm. The marks appear only

on part of the walls' stones, including some of the vault voussoirs. The order of their appearance on the walls is not systematic, and we are thus unable to understand the logic behind it. It is possible, of course, that the stones that seem to be unmarked are perhaps marked on the sides facing the core of the walls. Since there was no practical way of checking this, it must be regarded merely as a hypothesis.

The following is the distribution of the marks according to area: Area C: 147 marks; Area B: 66 marks; Area D: 10 marks; Area F: 64 marks; Area H: 21 marks. Total of surveyed marks: 368.

The largest number of marks were recorded in Area C (147 marks) and along the outer walls of Areas F and H (85 marks). Each group of masons marked the dressed stones with its own individual marks in order to receive their wages according to production quota. Moreover, we are unable to explain the absence of masons' marks on some of the stones (as mentioned, it is possible that they are concealed on their inner side) or their appearance in concentration on certain walls.

The following table lists the various marks and the frequency of their appearance in the various halls:

Remarks concerning masons' marks:

1. The mark ס appears also in the forms ס־, סּ
   The combination BA also appears in the forms AB, AB, BA
   The mark B is cut like this: B
   The mark Δ is cut with convex sides O
   The combination ⊓⊓ appears also in the form ⊓⊓
   The mark ↟ appears also in the forms ⅄, ↟
2. Special marks in Area B: ⊀, ⊀, Ø
   Special marks in Area A: ↟, Ɛ, T, Ψ, X
   Special marks in Area C: ⊔⊎, ⊓⊎, ⊎
3. Most widespread marks: ס, H, ⊓, L, Δ, BA, Ø, T, Ψ, X
4. The largest number of marks were found in Area C.
5. It is worth mentioning that similar masons' marks have been discovered in the theater of Hammat Gader (Sukenik 1935:120), indicating that this was a common practice among Roman builders at the site.

Masons' Marks in the Hammat Gader Baths

Type of Mark	Area C	Area B	Area A	Area D	Area F	Area H	Total for Each Mark
⊎	4						4
⊂⊐	2				1		3
⊓	17	1	6		7	2	33
⊔⊔	1						1
⊏⊏	5	1			1	3	10
⊔⊎					1		1
⊏⊏					1		1
⊏∪							1
ס	22	4	4		10	3	43
H	22	2			10	2	36
B	7			1	2	2	12
A	8	6				2	16
BA	6	1			3		10
L	5	6	11		5		27
Δ	19	5		3	3	1	31
O	2		5		1		8
⊙	4		1		3		8
+	4		1	1	2		8
Ø		16	2		1		19
T		5	9	2	1		17
X	2		5		4		11
⊀		4	1				5
Ψ		2	4		3		9
⊂⊻	4	1					5
⊙	1	2	1				4
8	2				1	1	4
8	1						1
Φ	1						1
V	1	1					2
∩	1	1					2
⊼+	1						1
⊻	1						1
OA	1						1
⊓⊻	1						1
▫▫	1						1
⊀Ɛ		5					5
⊔		1					1
⊻		1					1
M			3				3
⊓			1	3			4
↟			4		1		5
⅄		1					1
⊀				2			2
⊀					1	2	3
⊔					1		1
⊎					1		1
⊻					1		1
⊎		1					1
X				1			1
TOTAL							368

WATER SUPPLY SYSTEMS

Yizhar Hirschfeld

As opposed to regular bathhouses, in which various systems were installed for heating water, thermal baths in general and the Hammat Gader baths in particular required various methods for cooling water. 'Ain el-Maqleh, the hot spring that fed the main bathing pools of Hammat Gader, is too hot. The regular temperature of its water (51°C) is not suitable for comfortable bathing, and therefore it had to be lowered (to no more than 42°C).

In order to do this, the builders of the baths arranged for the conveyance of relatively cool water from one of the other springs of Hammat Gader, probably 'Ain Sa'ad el-Far ('Ain Sakhneh) in the northeastern corner of the site (see above, Fig. 4). This spring has a water temperature of 28°C and topographically is located at a relatively high elevation, so that its water could be led to the baths by means of gravitational flow via an aqueduct and pipe (in contrast to 'Ain Bulos which indeed has a lower water temperature, 25°C, but is located at a lower elevation than the baths, thus necessitating the use of expensive and complicated methods for raising the water). We may assume that the water from 'Ain Sa'ad el-Far lost some of its heat on its way to the baths, and that its temperature dropped to ca. 25°C by the time it reached them.

Therefore, at the Hammat Gader baths two separate water supply systems were in operation: a hot-water system based on the hot spring (51°C) issuing forth inside the building, and a cold-water system (25°C) based on an outside spring. Various considerations, to be detailed below, lead us to assume that the cool water was directed to a distribution station, a kind of water tower or tank located at the southern end of Area F (Fig. 39). From here it was conveyed in lead pipes to the numerous marble fountains around the pools. In contrast, the hot water was fed into the bathing pools directly from the hot spring via subterranean channels. In this way water from both systems was fed into the various pools, where the quantitative proportion between the two influxes determined the final temperature in each case.

The direct use of spring water ensured a steady flow of clean water to the pools. On the other hand, a sophisticated drainage system was installed, which drained the pool water to the Yarmuk River. As we shall see below, the operators at the site were able to regulate the rate of flow in each of the systems by using valves, some of which were discovered in the course of the excavations. Moreover, it should be noted that our knowledge of the water supply and drainage systems is only partial, since parts of the pipes were dismantled and removed over the years. A thorough study of the channels would have called for the dismantling of substantial parts of the floors.

The Hot-Water System – This system was relatively simple and easy to operate and maintain. A fairly large rectangular pool was built around the hot spring. Later on, in the Late Roman or Byzantine period, this pool was destroyed (most probably by an earthquake) and in its place the above-mentioned round tank was built. The water level in both the pool and the tank was regulated by a sluice gate located beyond their common western wall (W11). The sophisticated sluice gate is preserved in its entirety. When the gate was closed, the water rose to a level at which the water flowed into the bathing pools next to the spring.

The pool in the hall next to the spring (Area G) was most probably the hottest one. The water was led into it directly from the elevating pool or tank through some sort of passageway, the remains of which have not been preserved. The pool in Area G is connected to two other pools in the halls north of it, in Areas A and E, via a subterranean water channel. The channel cuts through the foundation of W2 and then branches out beneath the eastern part of the walkway in Area A. This channel carried the spring water to the pool in Area E. We may assume that the temperature of the water decreased the further it traveled from the spring. It may thus be concluded that the temperature of the water in the pool in Area A was lower than that

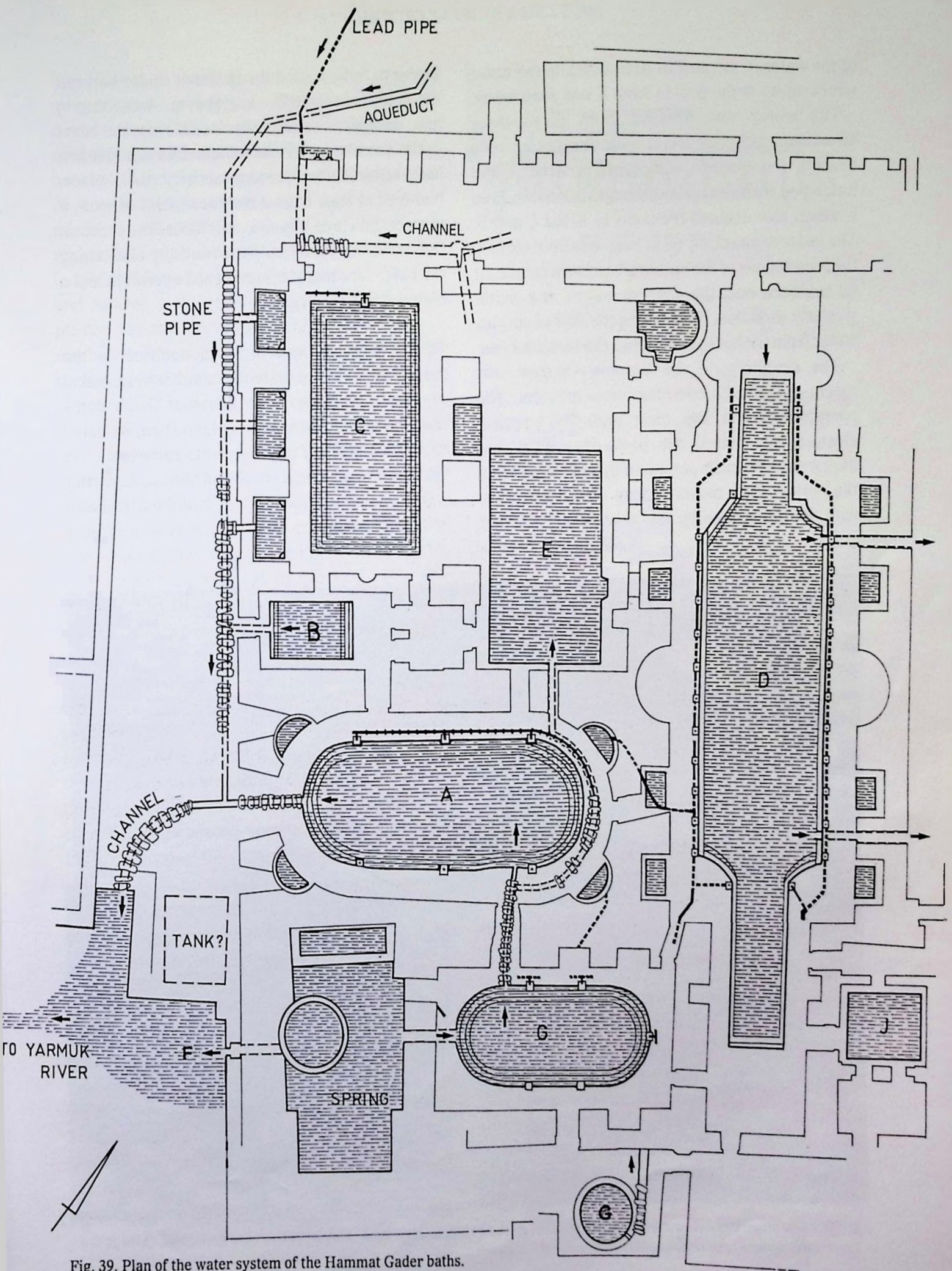


Fig. 39. Plan of the water system of the Hammat Gader baths.

of the water in the pool in Area G, while the water temperature in the pool in Area E was even lower.

The water was drained from these three interconnected pools via a built channel running beneath the western wall (W4) of Area A and linking up with the main drainage channel in Area F, which also drained the pools in Areas C and B. The latter channel, ca. 60 m long, was built close to the foundations of the building's western facade. At its southern end, the channel curves in a south-westerly direction, thus joining the flow of surplus water from the hot spring toward the Yarmuk River.

The simplicity of the hot-water system was meant to make its operation more efficient. The operators at the site most probably emptied, cleaned, and rinsed the pools frequently, and afterwards fed fresh water into them directly from the spring. This reconstruction is in conformity with the description by the pilgrim Antoninus of Placentia, who visited the Hammat Gader baths in the sixth century C.E. (see above). According to him, the operators at the site would rinse the baths in the evening hours. Antoninus does not mention how often such cleaning activity took place; however, at least from a technical point of view, it was possible to do this on a daily basis. The constant flow of spring water and the possibility of cleaning the baths frequently ensured good operation and a high standard of hygiene.

The Cold-Water System – In contrast to the simplicity of the hot-water system, the system that supplied cold water to the Hammat Gader baths was complicated and quite sophisticated. As noted above, the source of cold water was apparently 'Ain Sa'ad el-Far, issuing from the northeastern corner of the site. The distance of the spring from the baths is not great (about 1.5 km) and it is located on a



Fig. 40. Remains of the aqueduct that brought water to the baths, looking west. This aqueduct was apparently part of the cold-water supply system.

higher level, so that there was no special problem in conveying the water via an aqueduct, as was customary in the Roman period. During the excavation of the area north of the baths building, between it and the section of the street, a remnant of an aqueduct was discovered (Fig. 40). Only the northern sidewall of its channel has been preserved, and then only for a length of 6.5 m. The height of this wall is 0.5 m, and it is built of rubble and mortar and coated with reddish hydraulic plaster. The aqueduct runs in a general northeast to southwest direction as it passes the northwestern corner of the baths building; according to the directions of the slopes, it is clear that the water in the aqueduct flowed toward the southwest. These data suggest that this aqueduct brought the cold spring water to the baths, its clear destination being Area F.

Another remnant possibly associated with the cold-water system was also found in Area F – the basalt pipe exposed next to W6 (Fig. 41). The revealed part of the pipe is 8.7 m long and is made up of 18 segments which were found *in situ*. These segments are square-shaped and each one has a round hole with a diameter of 0.4 m (Fig. 42). The outer dimensions of each segment are 0.75×0.75 m and its length is 0.5 m. The segments are joined to each other by a protrusion and recess carved on their edges and lime mortar that sealed the joints, thus forming a very massive pipe that was meant to carry large quantities of water (Peleg 1991:134-135).



Fig. 41. Section of the basalt pipe exposed next to the "Wall of Windows" in Area F (service area), looking southeast.

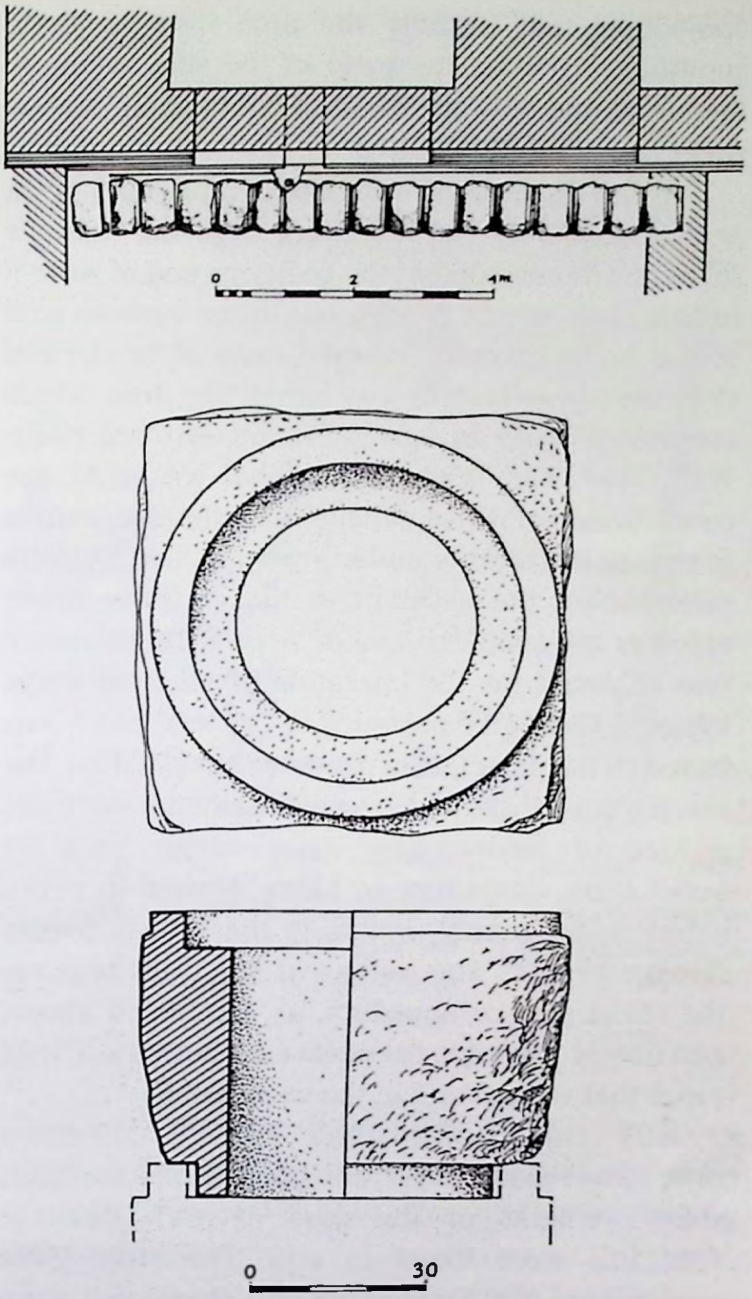


Fig. 42. Plan of a basalt pipe and detailed sketch of one of its segments.

The pipe's location parallel and adjacent to the building's wall, and the high quality of its installation, attest that it was laid at the time when the complex was being built, in the second century C.E. Later on, most probably in the Byzantine period, the pipe ceased to function and its course was interrupted by later walls. We do not know whether there was any connection between this pipe and the above-described aqueduct. It is more reasonable to assume that the aqueduct replaced the pipe after the latter went out of use, since the pipe could carry water under pressure while the water in the aqueduct flowed freely. We may

conjecture that initially the pipe was the main conduit conveying the water of the cold spring to the baths, and only after it went out of complete use was the aqueduct installed.

The destination of the stone pipe, and most probably also of the aqueduct, was the massive foundations revealed at the southern end of Area F. In this area, which is adjacent to the western wall of the baths complex, a solid mass of bricks and very hard gray mortar was found. The area, which measured 7.5×9 m, was delimited by three walls: W11, W87, and W30. Exceptional was W30, the construction of which called for a unique technique to ensure its stability under pressure. These efforts substantiate the assumption that a water tower stood at the southern end of Area F. Its existence was essential for the operation of the cold-water system. The water pressure in the lead pipes was based on the principle of pressure equalization. For this purpose, there had to be an elevated water tank, a kind of modern-day water tower. Such an installation, *castellum* in Latin, existed in every urban water supply system in the Roman period (Hodge 1992:2). The water was led to the tank via the stone pipe or aqueduct, as mentioned above, and flowed from it to the pools via a network of lead pipes that were found in the excavations.

Only the foundations of the *castellum* installation have survived; however, in contrast, many remains of the pipe network and the fountains were found *in situ*. The pipes were constructed of 0.5-cm-thick lead sheets that were bent and welded at their ends (Fig. 43). The diameter of most of the pipes at Hammat Gader is 7.5 cm, corresponding to the standard size used in the Roman world. The welding created a kind of ridge or seam along the back of the pipes. The width of this ridge is 2.5 cm and its height is 1 cm. Each pipe is composed of many segments and widens to a diameter of 12 cm at its welded joints.

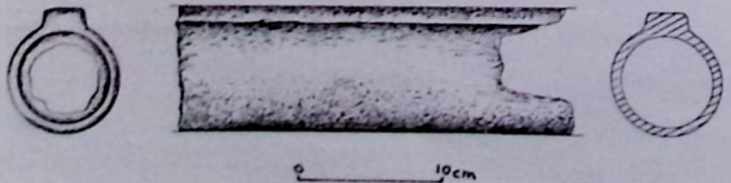


Fig. 43. View and section of a typical lead pipe found at the site.

The lead pipes were usually laid beneath the walkways around the pools. In several places pipe segments were discovered *in situ*, while in others only their imprints were found. Offshoots of the peripheral pipeline branched out at right angles to the marble fountains that stood next to the pools (Fig. 44). Foundation stones were sometimes laid below pipe intersections for added protection. This type of stone was revealed during the excavations, but not *in situ*.

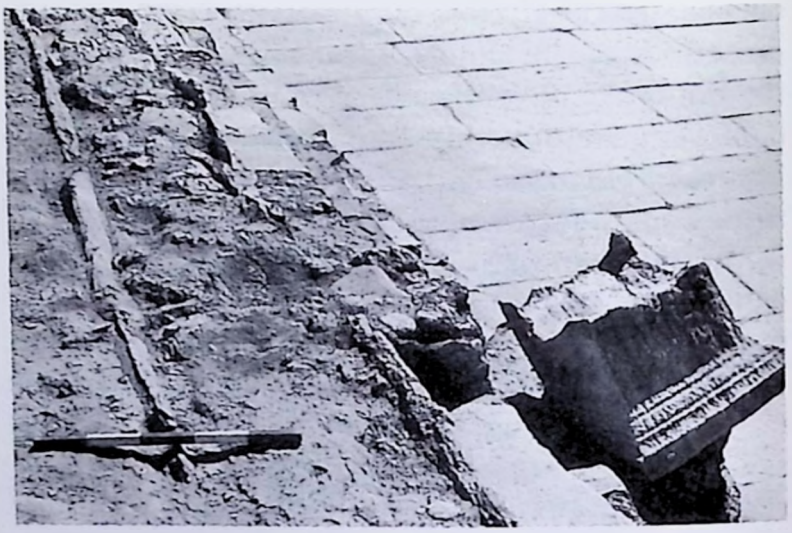


Fig. 44. Section of the lead pipe found in the walkway of Area A (Oval Hall), looking east. Note the branching out of the pipe in the direction of the fountain.

A lead pipe of exceptional dimensions was discovered beneath the many fountains around the central pool of Area D (Fig. 45). Its outer diameter is 19 cm and the width of its welded ridge is 3.5 cm. This wide pipe ran beneath two rows of fountains flanking the central pool. Vertical lead pipes of regular diameter, i.e., 7.5 cm, were connected to the main pipe at set intervals. The many marble fountains on either side of the pool were placed above these pipes (Fig. 46), thus ensuring a uniform supply of water to all of them at one and the same time.

The letters A and B were incised on the top of the main lead pipe (Fig. 47). These marks, which may be termed "plumbers' marks," were apparently incised by subcontractors who were responsible for the plumbing at Hammat Gader. In this respect, there is no difference between these marks and the

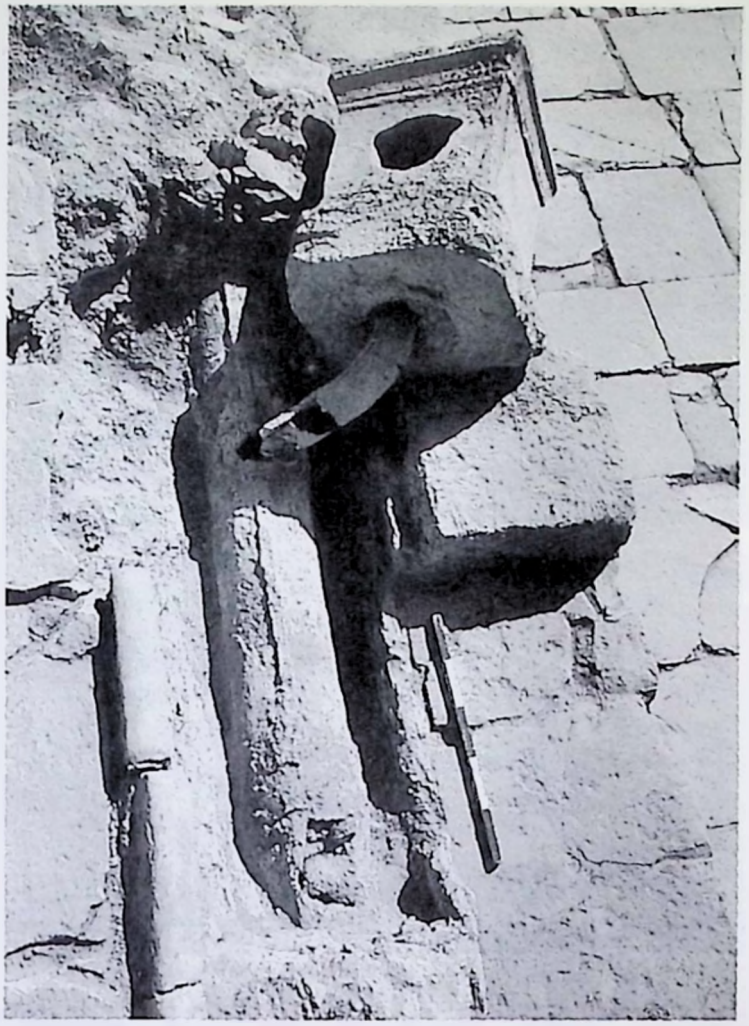


Fig. 45. Section of the lead pipe found beneath the fountains at the side of the central pool of Area D (Hall of Fountains), looking south.

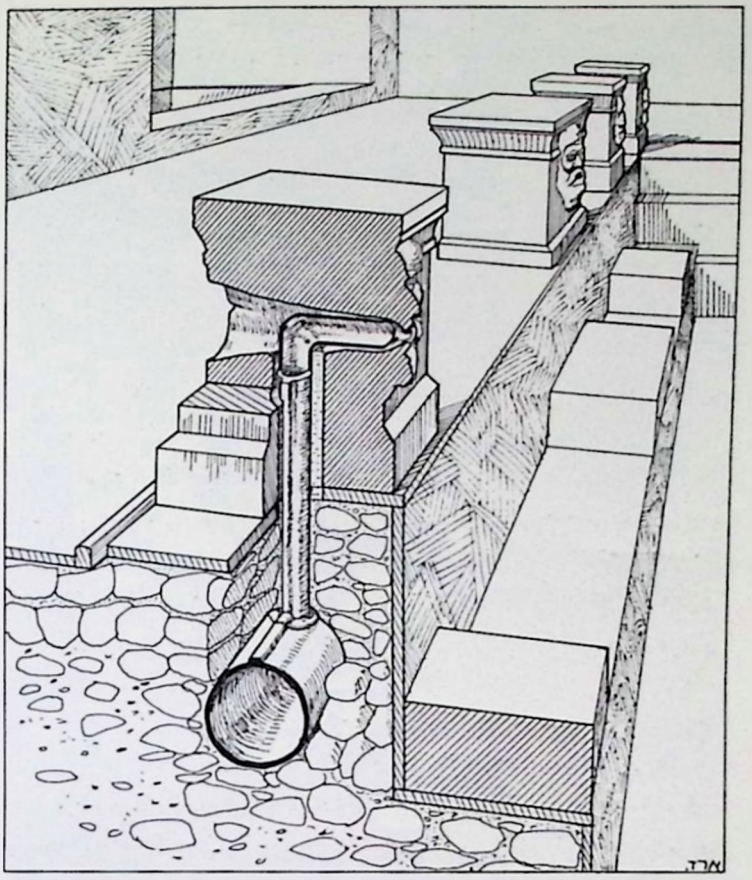


Fig. 46. Suggested reconstruction of the fountains and the plumbing beneath them next to the central pool of Area D (Hall of Fountains).

many masons' marks that were found incised on the masonry of the building.

The cold water in the Hammat Gader baths was fed into the pools via the flanking marble fountains. The number of fountains varies from pool to pool. In Areas G, A, and C the fountains projected partly into the pools. The largest number of fountains – 28 – fringe the central pool in Area D which was appropriately named "The Hall of Fountains."

The marble fountains at Hammat Gader were designed as small altars. Their height varies from 0.5 m to 0.8 m, and the average width of their sides is 0.4 m (Fig. 48). The fountains are not identical but they all functioned according to the same technical principle. At the base of each of them a round hole with a diameter of ca. 20 cm was drilled, into which a vertical lead pipe was inserted. In one of the fountains in Area D, the vertical lead pipe has been preserved inside the hole (Fig. 49). The space around the lead pipe, measuring only 9 cm in diameter, was filled with gray mortar containing organic matter.



Fig. 47. Manufacturers' marks engraved on the wall of the main lead pipe.







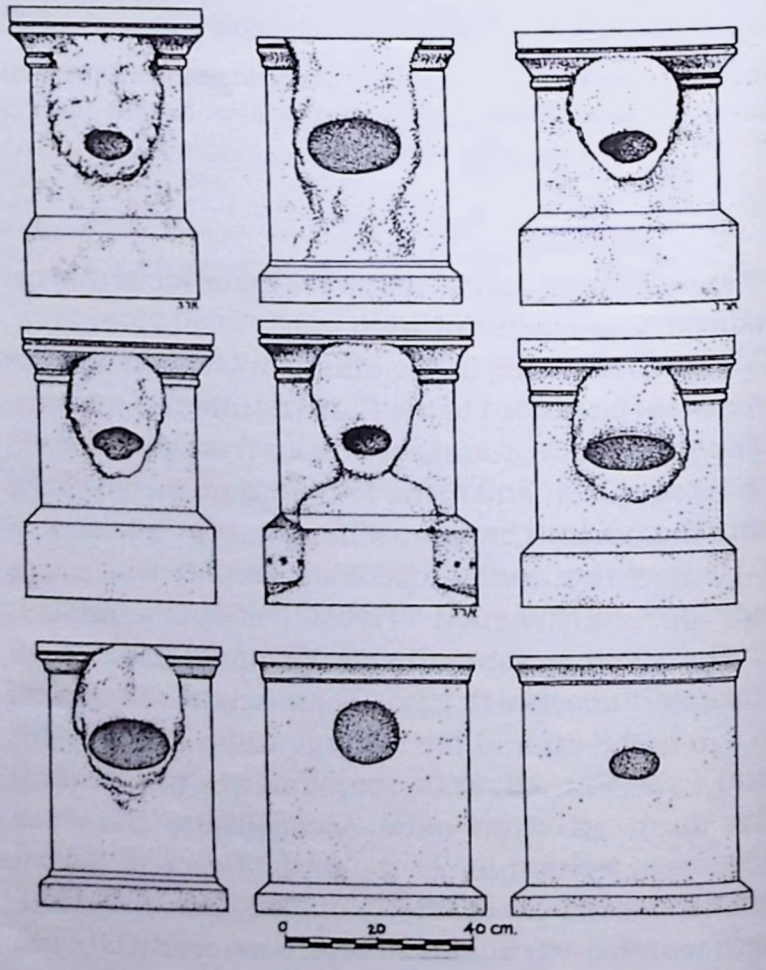


Fig. 48. Several marble fountains found in Area D.



Fig. 49. Base of a fountain containing a lead pipe that fed the fountain with water.



Fig. 50. Valve in one of the fountains at the rear of the lead pipe that fed the fountain with water. The valve was intended for maintenance and control purposes.

The water rose to the top of the lead pipe and from there flowed through a horizontal hole to the opening at the front of the fountain, where it issued forth. The frontal openings were decorated with faces of humans or lions, and the jet of water spewed out from their mouths (see Chapter 12). In addition, each fountain had a rear control valve. This valve, the dimensions of which permitted the entry of a hand (Fig. 50), served for maintenance of the lead pipe.

The temperature of the water in the pools was determined by the quantity of cold water added and the distance of the pool from the hot spring. Operation of the fountains increased the inflow of cold water, thus lowering the temperature. Intentional blocking of some of the fountains decreased the inflow of cold water, and thus it was possible, when necessary, to raise the temperature of the pool water (for example, in the winter or in the evening hours).

The lead pipes in the Hammat Gader baths also supplied water to some of the bathtubs in the various alcoves. Some of the pipes were found *in situ* and in certain cases small tunnels for housing the pipes were revealed inside the walls, e.g., the tunnel in W3, leading from Area G to the semicircular alcove at the southeastern end of Area A. In this alcove, a small bathtub was fed with cold water and drained via a lead pipe into the central pool. This made possible a further lowering of the water temperature in the central pool.

In addition to the two main water systems of the baths, smaller water systems were also in operation. For example, a double fountain, apparently supplying drinking water, was discovered in the northwestern corner of Area C. This system was fed by a separate lead pipe, the remains of which were discovered north of Area C. In this context, we should mention the discovery of a large stone basin which may have been connected to the cold-water system. This basin was not found *in situ* and therefore it is difficult to determine its original location and function in the building. Additional details regarding the site's water systems will be discussed in the description of the remains that follows.

DESCRIPTION OF THE ARCHITECTURAL REMAINS

Yizhar Hirschfeld

The architectural remains of the baths complex at Hammat Gader will be described below according to their phases of construction, from early to late. First we shall deal with the remains dating to the Roman period (Phase I), during which the majority of the structure's components were built; they continued to function, albeit with modifications, until the destruction of the complex in the earthquake of 749. We shall then discuss the modifications made in the structure in the Byzantine period (Phase II) and the Umayyad period (Phase III). In concluding this architectural overview, we shall note the poor remains of what was built above the structure's ruins after the earthquake of 749 (Phase IV) and in the Middle Ages (Phase V).

The description of the bath's various components will follow the course which the bathers would have taken in antiquity. This route probably began in the entrance corridor (Area H) located in the northern part of the complex (Fig. 51). From this corridor the bathers entered two adjacent halls on its southern side: the Hall of Piers (Area C) and the Hall of Inscriptions (Area E). (We assume that the northern entrance to Area D was only for the operators.) As we shall see below, these halls contained large pools in which the bathing activity actually commenced. The bathers then advanced through the passage rooms (Area B) into the Oval Hall (Area A) to the south.

The climax of the bathing itinerary was the Hot Spring Hall (Area G), which contained the hottest bathing pool, as it received its water directly from the spring. The spring itself was considered to be a holy wonder, and all visitors to the site probably came to this spot. From here the bathers could proceed to the adjacent Hall of Fountains (Area D) containing the monumental swimming pool surrounded by fountains. From here one could move on to several halls and courtyards in the eastern part of the complex, only a small part of which has been excavated (Area J). Another area, the remains of which shall be described separately, is the service area (Area F) west of the baths complex.

PHASE I: THE ROMAN PERIOD

Area H: The Entrance Corridor

Area H, extending along the northern end of the baths complex, contains two main components: a long corridor leading into the bathing halls and, north of it, a section of the street which was part of the Hammat Gader street network (Fig. 52). They are separated by a solid wall (W90), which formed part of the northern facade of the baths complex, and what seems to be a row of shops. There are two entrances in this wall, each with a flight of stairs connecting the higher street level with the corridor level.

A section of the street north of the baths was exposed; its maximum length is 28 m and its width ranges from 3 m to 10 m. It is paved with well-smoothened basalt slabs (Fig. 53). The street slopes, apparently following the local topography: the level at its southern end is -170.06, rising to -169.67 at its northern end, and reaching -168.90 at its eastern end – a height difference of over 1 m.

The paving stones at the eastern end of the street are laid diagonally in a herringbone pattern, as was customary in street pavements of the Roman period. The average size of the stones in this section is 0.5×0.7 m. The basalt slabs at the western end are laid in parallel rows at right angles to the baths building. The fact that different methods of stone-laying were employed in these two sections indicates that a small square or piazza stood opposite the western of the two northern entrances of the baths building.

The paving stones are carefully dressed; their upper face is smooth and their lower, wedge-shaped part is roughly dressed. The slabs are 0.25 m thick and were laid on a massive, well-constructed 1.1-m-thick bed of white mortar overlying a fill of medium-sized boulders.

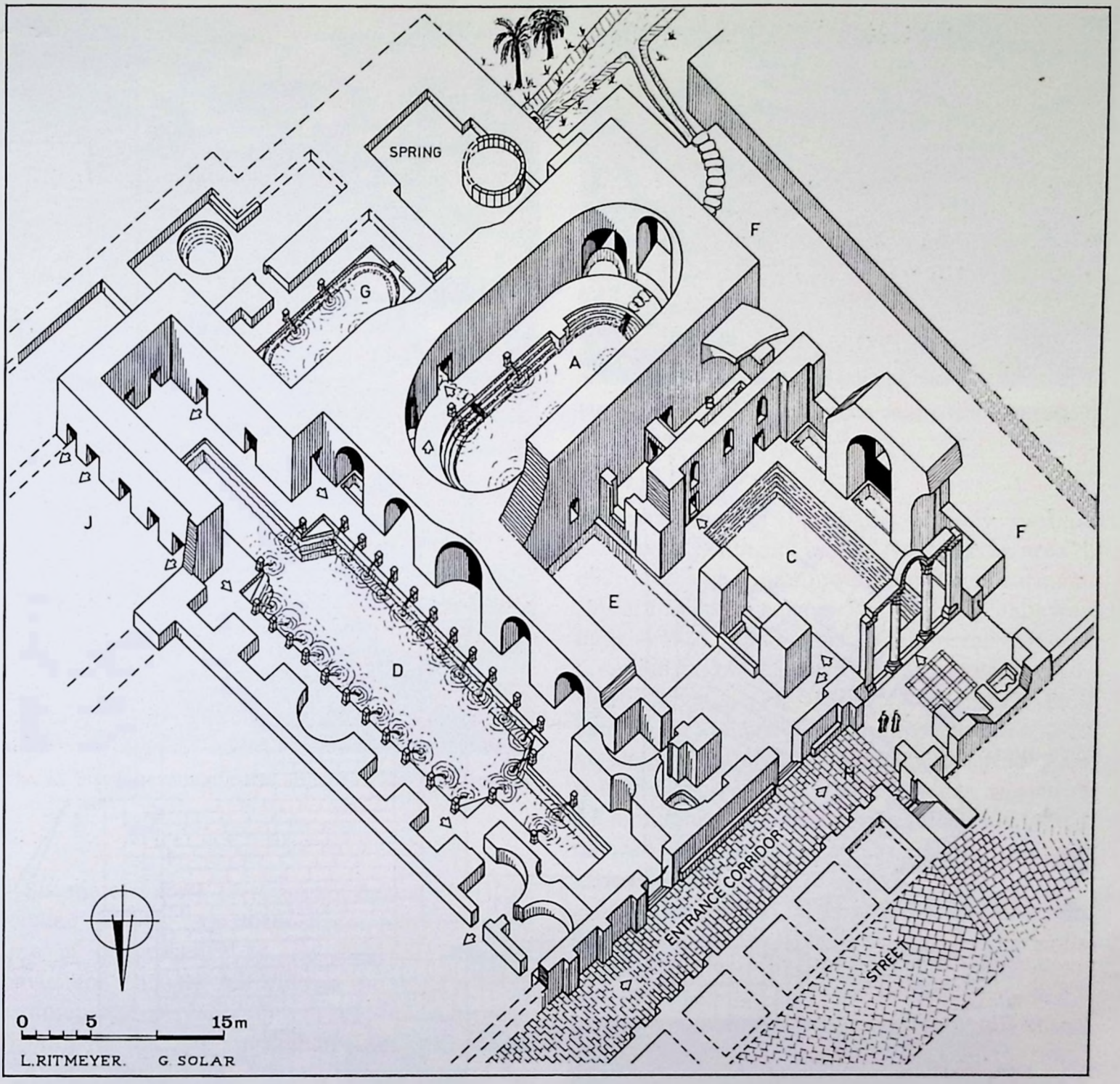


Fig. 51. Partial reconstruction of the baths complex, with identification of excavation areas and the conjectured bathing route (marked by arrows).

At the southern end of the street's eastern part (L. 806) we uncovered a late wall (W117) built parallel to the northern wall (W90) of the baths complex. This wall (0.7 m wide and preserved to a height of two courses) is located on the architectural seam that separates the street from the conjectured sidewalk (unexcavated) south of it. This assumption is based on a section of paving stones, measuring 1.2×2.5 m, discovered south of W117 (Fig. 54) and lying perpendicular to the baths building at a level of -170.05, the level of the southern end of the street. These paving stones were probably part of a sidewalk flanking the street, between it and the baths. The distance of 4.5 m between W117 and W90 is sufficient for the width of such a sidewalk.

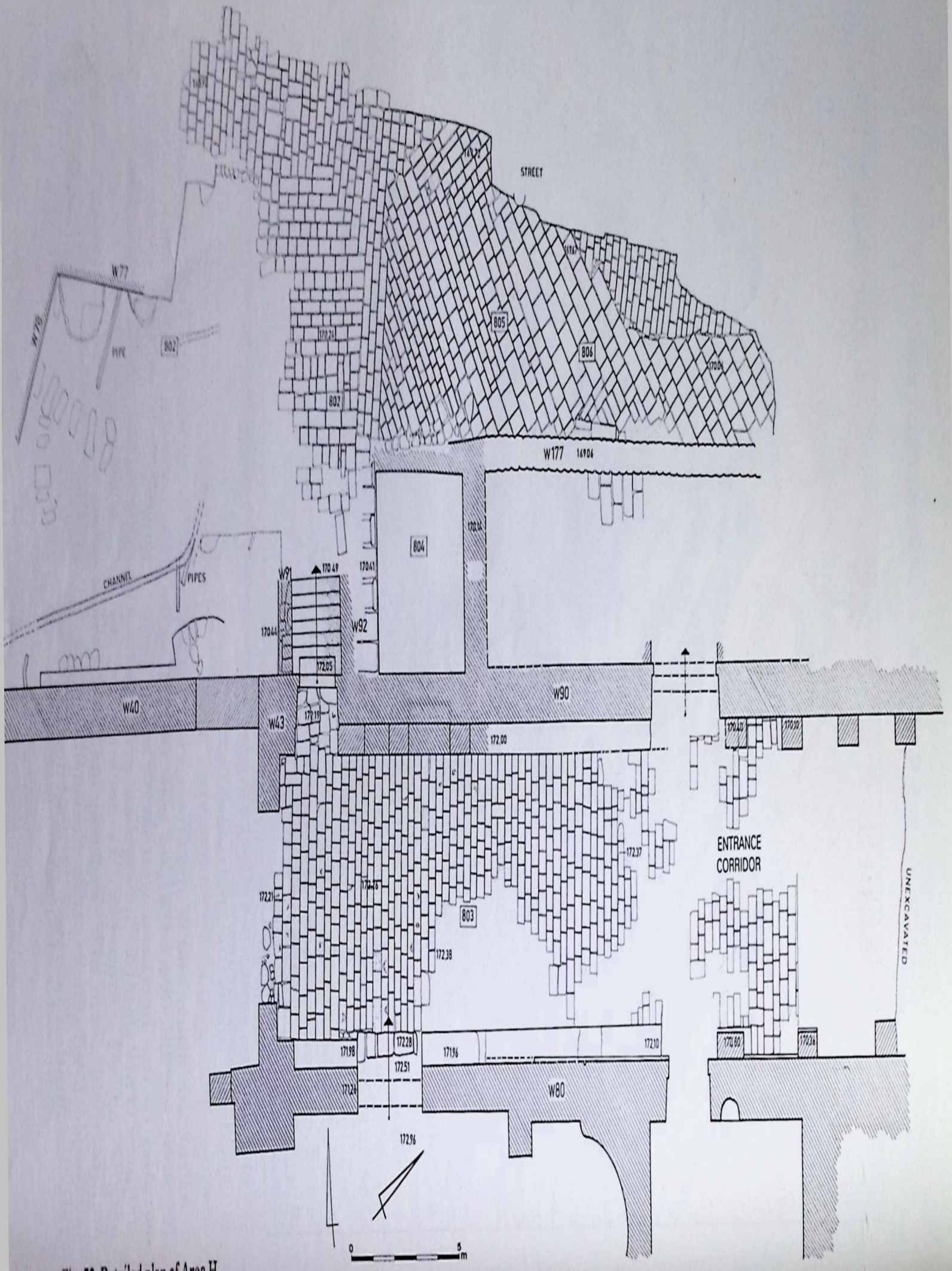


Fig. 52. Detailed plan of Area H.



Fig. 53. Street pavement north of the baths (L. 806), looking west.

Six meters north of the seam beneath W117 is located the long axis of the street, marked by the line of convergence of the diagonal strips of pavement. Thus the full width of the street is 12 m, a dimension corresponding to the standard specification for the *cardo* in Roman cities.

At the western end of W117, between it and the northern wall (W90) of the baths complex, was a room (interior dimensions: 4×4.6 m) which we have interpreted as a shop (L. 804). The excavation in this locus was not completed, but we assume that there was a row of shops flanking the street. The numismatic finds here include Byzantine coins, the earliest of which dates from the mid-fourth century. Thus, the shop was already in use in Phase II; however, its incorporation into the original complex seems to indicate that it was erected as part of the building project of the Roman period.

The piazza in front of the western entrance on the



Fig. 54. Section of the street and on it a late wall (W117), looking north.

northern side of the baths is only partially preserved. South and west of it extends an area (L. 802) that is ca. 1.6 m lower. In order to surmount this difference in heights, two retaining walls were built – W77, which runs in a general east-west direction, and W78, which runs in a general north-south direction (Fig. 55). W77 is crudely built, extends for a length of 6 m and has a height of 2-2.5 m. The line of the wall follows the topography and is therefore irregular. A large boulder, measuring 1.6 m in diameter, was incorporated at the base of the wall. W78 runs at an obtuse angle to it and was exposed over a length of ca. 4 m.

In the area south of these walls, remains were found of pipes and channels belonging to the baths'



Fig. 55. Walls (W77, W78) delimiting the street, and beneath their foundations – a lead pipe, looking northwest.

cold-water supply system. A section of lead pipe perpendicular to the foundations of W77 was revealed *in situ*. It is 1.6 m long and ca. 10 cm in diameter. The pipe section (-171.12) is ca. 0.15 m lower than the two paving stones next to it. It is probable that the entire area was paved with similar stones that have not survived. The pipe runs in the general direction of the northwestern corner of the complex, where another section of lead pipe was found *in situ* (Fig. 56). The latter pipe, also measuring 10 cm in diameter, passes through the foundations of W40 to a double fountain on the other side of the wall, within Area C (see below). We may assume that these two sections were parts of a single pipe that supplied drinking water to the fountains in question.

The lead pipe passing through W40 is at a level of -172.55. Above it, at -172.07, are the remains of a large aqueduct that presumably brought cold water to the building. Beneath the aqueduct, three clay pipes extending southwest were found *in situ*. Two of them were located close to one another. The diameter of the higher one (-172.26) is 0.2 m, the length of its segments is 0.4 m, and it is made of well-fired brown clay (Fig. 57). The pipe beneath





Fig. 56. Continuation of the lead pipe in the section where it passes through W40 into the baths.



Fig. 57. Upper clay pipe north of the baths (L. 801).

it (-172.64) is slightly different: its diameter is 0.22 m, the length of its segments is 0.5 m, and it is bottle-shaped (Fig. 58). Both pipes are located beneath the foundations of the aqueduct and therefore, at least in the technical sense, predate it.

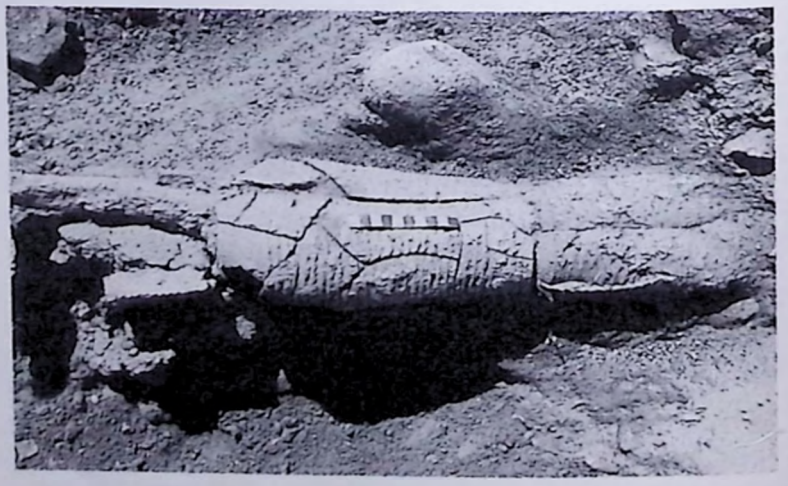


Fig. 58. Lower clay pipe north of the baths (L. 801).

A third pipe was discovered 1.8 m from the eastern end of the aqueduct, at -172.21. It has a diameter of 0.12 m, i.e., is of smaller caliber than the aforementioned pipes.



Fig. 59. Entrance corridor (Area H), looking west.

The large number of pipes indicates that the area under discussion, between the piazza and the northern wall (W40) of the baths, functioned as a service area, with no entry to the public. This area may be linked to Area F west of the baths, where most of the water installations are located.

The entrance corridor in the northern part of the baths complex was exposed for a length of 30 m (Fig. 59); it is 7.3 m wide and situated between two long walls: W90 on the north and W80 on the south. W90 is preserved to a maximum height of 3 m, has a thickness of 1.2 m , and is built of large roughly-dressed stones (Fig. 60). This wall, together with W40 and W82, forms part of the northern facade of the baths complex. These three walls were exposed for a length of over 50 m; since the excavation of the northeastern area of the site was not completed, we are unable to estimate the full length of this facade.

W90 had to withstand great pressure because of the high level of the street to its north. In order to stabilize and reinforce the wall, basalt pilasters were built along it. These pilasters were constructed on a raised foundation, a kind of step 0.7 m wide and ca. 0.3 m higher than the floor. A similar step was also built along W80 which delimits the entrance corridor on the south. A total of seven pilasters were uncovered along W90 – three on the west and four on the east. The pilasters are of uniform size, 0.9 m long and protruding ca. 0.7 m from the wall (except for the one forming the eastern doorpost of the western entrance, which is 1.1 m long). The four pilasters at the eastern end of the wall were built at fixed intervals of 1.6 m;



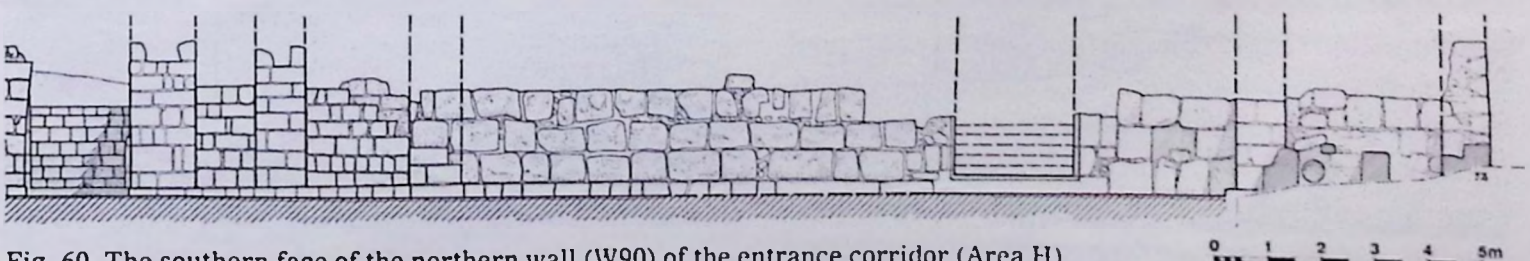


Fig. 60. The southern face of the northern wall (W90) of the entrance corridor (Area H).

however, the distance between each of the three western pilasters varies – 1.1 m between the westernmost one and its neighbor to the east, and 1.9 m between the latter and the third pilaster. We should note that at a later phase of occupation the spaces between the pilasters were filled with stone construction of relatively good quality.

In the course of the excavation, several vault voussoirs were found lying on the floor of the entrance corridor. They differ from one another in their dimensions. It appears that these stones were not used for the construction of arches spanning the corridor (since the pilasters along W90 and W80 were not built opposite one another), but rather for arches between the pilasters on each side. These pilasters had a dual purpose, serving not only to buttress the walls but also to reduce the width of the entrance corridor from 7.3 m to 5.9 m. Moreover, the spaces between the pilasters formed niches which, if fitted with wooden shelves, could have been used to store various accessories.

We exposed two entrances in the northern wall leading to the street to its north. The western entrance is preserved in its entirety (Fig. 61); its width is 1.65 m and its doorposts are preserved to a height of 2.8 m. Along the threshold and doorposts a 0.3-m-wide recess was carved for the door. From the measurements of the entrance, it is clear that this door (now missing) was large and heavy.

The seven steps of the staircase ascending from the entrance to the piazza are flanked by two 1.8-m-thick walls – W92 and W91 – 2.3 m apart. The width of the steps' treads is uniform – 0.3 m – but the height of their risers varies from 0.15 m to 0.25 m (Fig. 62). The basalt stones of the steps are finely dressed and have a sheen due to their continuous use.

The eastern entrance in W90 is wider (2.2 m) and its doorposts, preserved to a height of 1.3 m, were only partially exposed. A recess for a wooden door was carved along the doorposts. We may assume that here, too, there was a staircase, but it has not yet been exposed.



Fig. 61. Entrance and staircase from the street into Area H (entrance corridor), looking north.

The southern wall (W80) of the entrance corridor is preserved to a height of 0.5 m on the west and 2.5 m on the east (Fig. 63). Its thickness is not uniform: its eastern part, bordering on Area D, is 1.2 m thick, while its western part, bordering on Area E, is only 0.9 m thick. A raised foundation (0.6 m wide and 0.2 m high) supporting the pilasters built along the wall

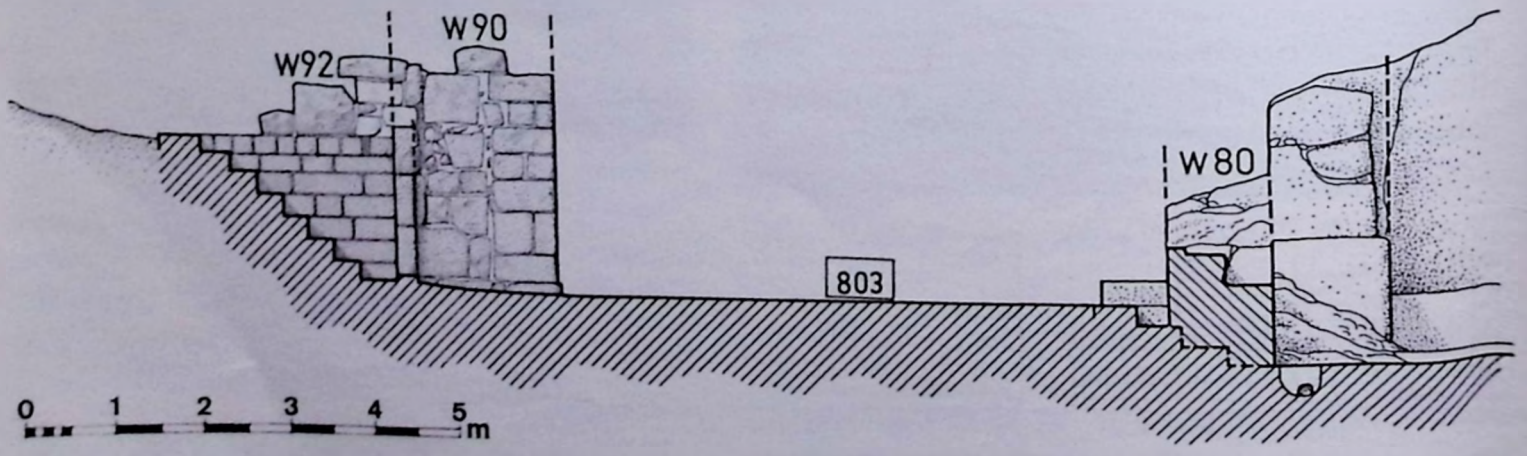


Fig. 62. Cross section of the width of the entrance corridor (Area H) and the staircase leading from the street, looking east.



Fig. 63. The southern wall (W80) of Area H (entrance corridor), looking southwest.

continues uninterrupted for a length of 17 m, except for a break opposite the entrance leading into Area E.

Along the eastern part of this wall, three pilasters, similar to those on the northern wall, have been preserved (Fig. 64). All of them protrude ca. 0.6 m from the wall, but they differ in length: the westernmost pilaster is 1.2 m long while the one to its east is only 0.85 m long; the third pilaster, preserved to a height of 2.2 m, is 0.9 m long. These three pilasters are 2.5 m apart. We should note that the lowest course of each pilaster is especially high (0.5 m).

Two entrances were also discovered in the southern wall: a western entrance leading into Area E and an eastern one leading into Area D. The western entrance is particularly wide – 3 m. No recess for a door was found in its threshold, which is built of well-dressed basalt stones, and thus the entrance was open to free passage. The pavement level of the entrance corridor is 0.65 m higher than the floor level of Area E. Three steps were thus built to the full width of the entrance. The tread of each is 0.5 m wide and the riser is 0.25 m high. The steps are worn smooth due to the frequent use of this staircase by the bathers. At a later phase of occupation (most probably Phase III) the western entrance was blocked by a well-built wall.



Fig. 64. Engaged pilasters in the southern wall of Area H (entrance corridor), looking southwest.

The eastern entrance in W80, which leads to Area D, is located opposite the eastern entrance in W90 leading to street level. This is a relatively narrow opening – 1.8 m – and there is a recess in its doorposts, indicating the former presence of a door. It may be concluded that entry from the corridor into Area D was restricted.

The floor of the entrance corridor (L. 803) is made of well-dressed basalt paving stones. The average level of the entrance corridor's pavement is -172.37 on the east and -172.21 on the west. The slabs are rectangular, measuring ca. 0.3×0.5 m, and are laid in parallel rows at right angles to the long walls of the entrance corridor. The lower part of the stones is roughly dressed, in contrast to the surface, which is well dressed and worn as a result of foot traffic by the visitors to the baths in antiquity. Most of the slabs have remained *in situ* without damage. On some of them masons' marks of various kinds could be identified. In some places it was noted that parts of the pavement had been damaged, most probably as a result of the collapse of ceilings and upper parts of walls during the earthquake of 749 C.E.

Debris of tufa voussoirs, of the kind used by the builders of the baths for constructing vaults, was found on the floor of the entrance corridor. We may thus assume with a great degree of certainty that the entrance corridor was roofed with a stone barrel vault. The ceiling vault was supported by the long walls of the entrance corridor (W80 and W90) and by the engaged pilasters buttressing them. As mentioned, this buttressing narrowed the width of the entrance corridor from 7.3 m to 5.9 m.

We may assume that light entered the entrance corridor through a row of windows in the northern

wall facing the street. These windows could have been located beneath the tops of the niches between the pilasters, and above the roofs of the proposed shops. Additional light could have come from the northern part of Area C, which was actually a direct continuation of the entrance corridor.

Area C: The Hall of Piers

Area C received its name from the row of large piers built on either side of the hall and forming its two long walls, W6 on the west and W7 on the east. This was one of the largest and most magnificent halls in the complex; it is from here that the bathing route of the visitors began. The hall is rectangular; its interior is 27 m long from north to south and 10.5 m wide from east to west; its overall area is thus ca. 280 m^2 (Fig. 65).

Area C is divided into two parts having different pavement levels: the southern part contains the central bathing pool, and the northern, higher part is a direct continuation of Area H. Traffic flowed along the entrance corridor from east to west, and therefore when visitors arrived in the northern part of Area C they took a 90° turn to the left. In their progress from this point to the spring at the southern end of the complex, the bathers moved in a general north-south direction.

Area C is bounded on the north by W40. This is a well-built wall reinforced by four pilasters. It is preserved to a height of 3.2 m, has a length of 11.4 m and thickness of 1.2 m, and is built of roughly-dressed basalt stones (Fig. 66). On the east, 2.9 m from the northeastern corner, an architectural seam between the wall and a later addition is visible. This addition, the dating of which is not clear, is recognizable on account of the use of fieldstones in contrast to the dressed stones in other parts of the wall.

W40 is buttressed by four pilasters built perpendicular to its southern side. The two outermost pilasters (W41 and W43) are incorporated into the wall itself, protruding ca. 2 m from its face; each is 1.1 m wide. The two inner pilasters (W42 and W39) were built after construction of W40 was completed (as indicated by the architectural seams between them and the wall). These pilasters, like the outer ones, protrude 2 m from the face of the wall but are narrower, each being 0.9 m wide. They are 3.5 m apart and are separated from the outer pilasters by a distance of 3 m. All four pilasters are built of well-hewn stone. W42 is preserved to a height of 2 m, and W39 to a height of 2.8 m (Fig. 67). The high quality of construction of the two inner pilasters is an indication of the important role they played not only in buttressing the hall's northern wall, but also apparently in supporting the ceiling. In all likelihood, ceiling vaults were built between these four pilasters. This assumption is borne out by a number of vault voussoirs that were found on the floor during the excavation of the area next to the pilasters.

The three rectangular alcoves in the spaces between these pilasters probably had various functions in the structure. In the western alcove (L. 310), we exposed a double fountain consisting of two semicircular niches in which water flowed (Fig. 68). The diameter of the niches is 0.6 m and they are built into a limestone shelf at a height of 0.9 m. The shelf protrudes ca. 0.8 m from W40. In the center of each niche, a clay pipe, found *in situ*, was laid in a slanting channel. The diameter of the pipes is 10 cm and the thickness of their walls is 8 mm.

Water reached the fountain via a lead pipe discovered outside W40. This enabled us to suggest a reconstruction of the double fountain (Fig. 69). This fountain probably supplied cool drinking water to the visitors.

The western long wall (W6) of the Hall of Piers is preserved to a height of 8 m above the floor (Fig. 70). Composed of three free-standing piers and a fourth incorporated into W5, this wall is 3.6 m wide at its base and gradually narrows upward. This is due to the fact that the four lower courses of the wall's western side gradually recede upward. The width of the upper part of W6 measures only 3.3 m.

A semicircular arch has been preserved between the second and third piers of W6 (Fig. 71). The springs of the arch are located 4.7 m above the floor, and it attains a maximum height of 6.7 m. The other two arches (only the bottom parts of which have been preserved) resemble the central arch, except for the fact that their springs are 0.35 m higher. This difference is due to the smaller distance between the piers: 3.9 m on the north and 4.1 m on the south.

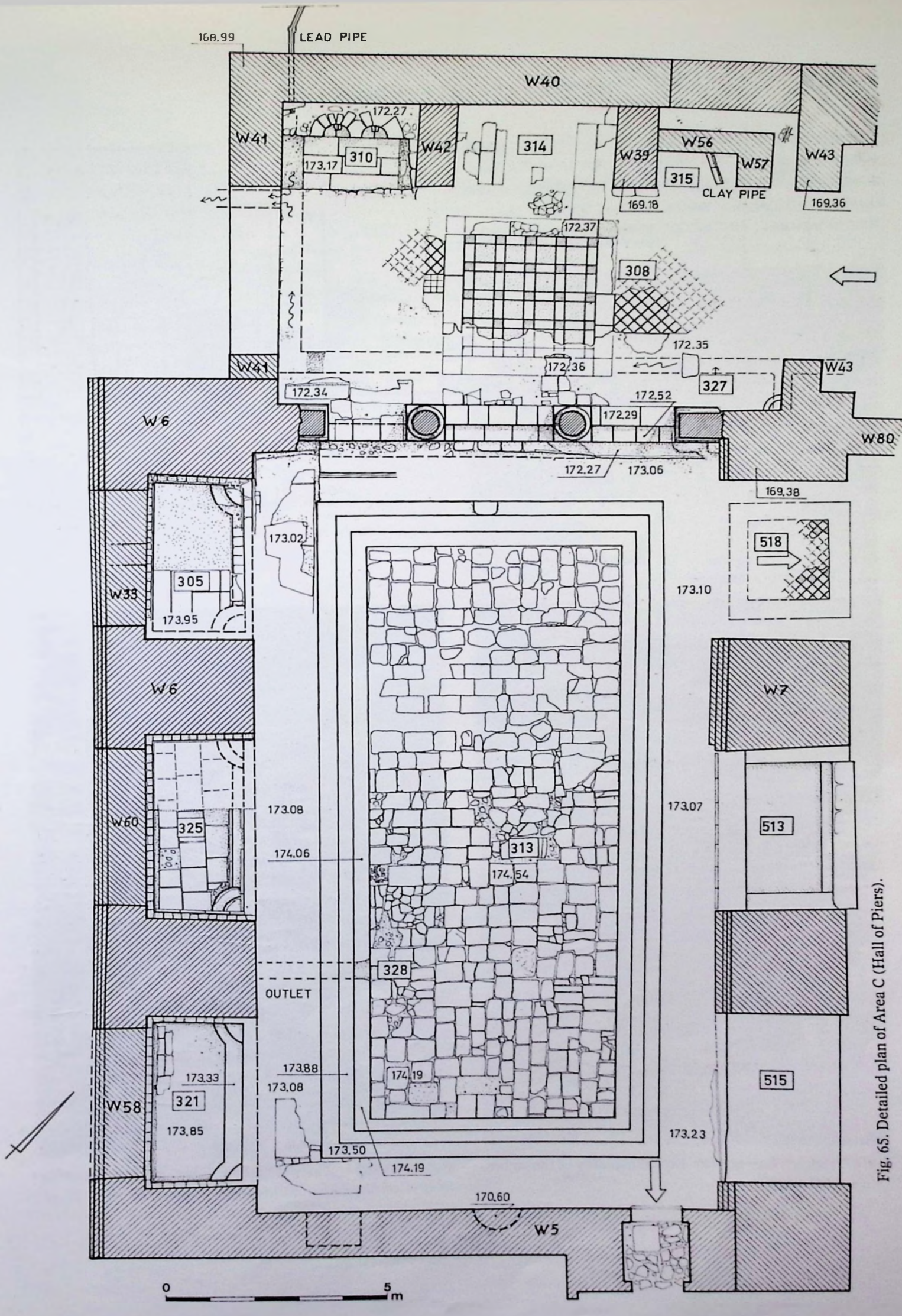


Fig. 65. Detailed plan of Area C (Hall of Piers).

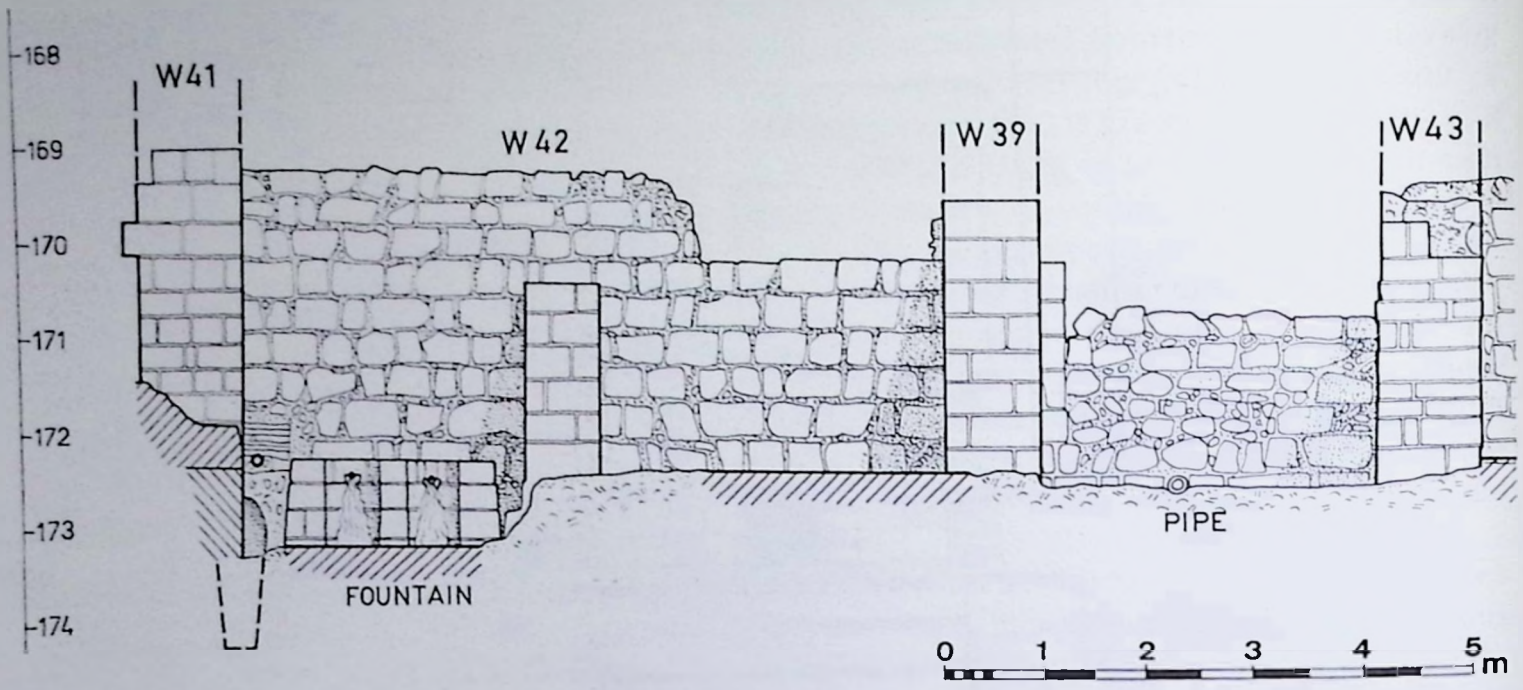


Fig. 66. The southern face of W40.



Fig. 67. Eastern face of W39. Note the quality of the stones' dressing.



Fig. 68. Double water fountain next to W40, looking northwest.

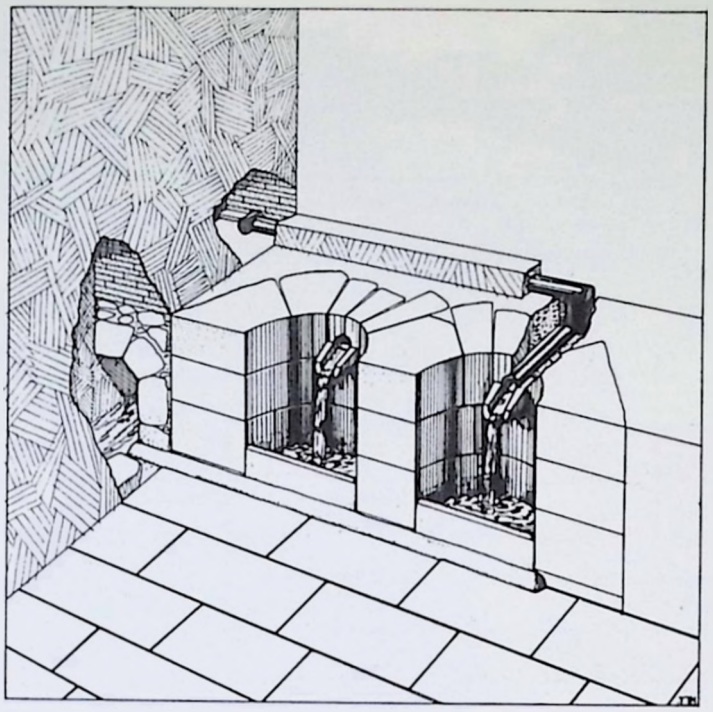


Fig. 69. Suggested reconstruction of the double water fountain in the northern part of Area C (Hall of Piers).

As a result, the builders were obliged to raise the springs of the two side arches so that all three arches would have the same height.

The cross sections of the central piers of W6 are T-shaped. Their length is 3.6 m, while their width varies from 2.3 m to 3 m due to the 0.35-m projection of the doorposts on the sides of each pier. Three walls (W58, W60, W33) were built between the piers, preventing passage from Area C into Area F. The thickness of these walls is 1.3 m. W33 is preserved to a height of 2.6 m above the walkway. A rectangular opening (0.6×1.25 m) was left in the center of this wall, and beneath it, at floor level, was a small opening to allow water to enter the bathtub built between the piers (see below). The lower half

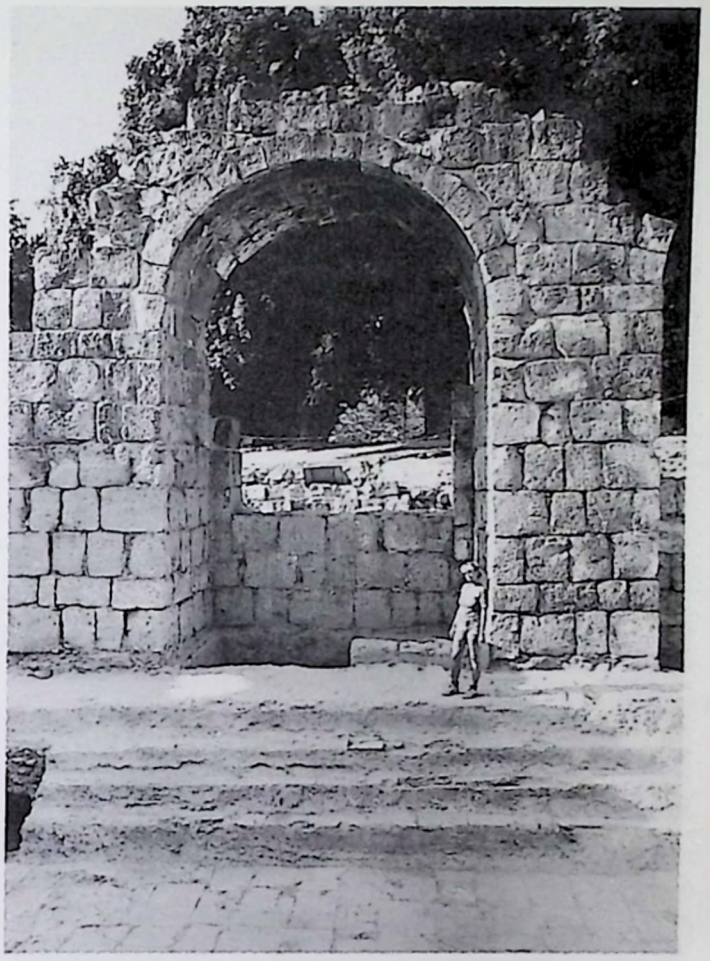


Fig. 70. The two main piers of the western wall (W6) of Area C (Hall of Piers), looking west.

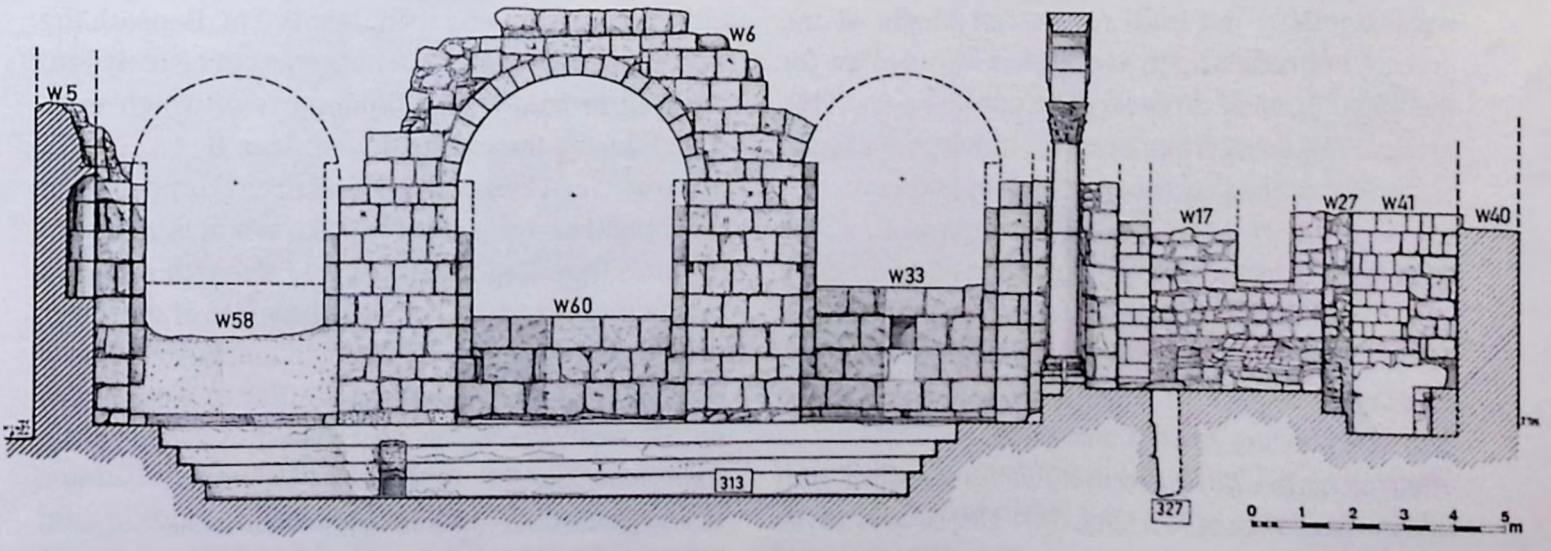


Fig. 71. View of the western piers (W6) and the walls between them.

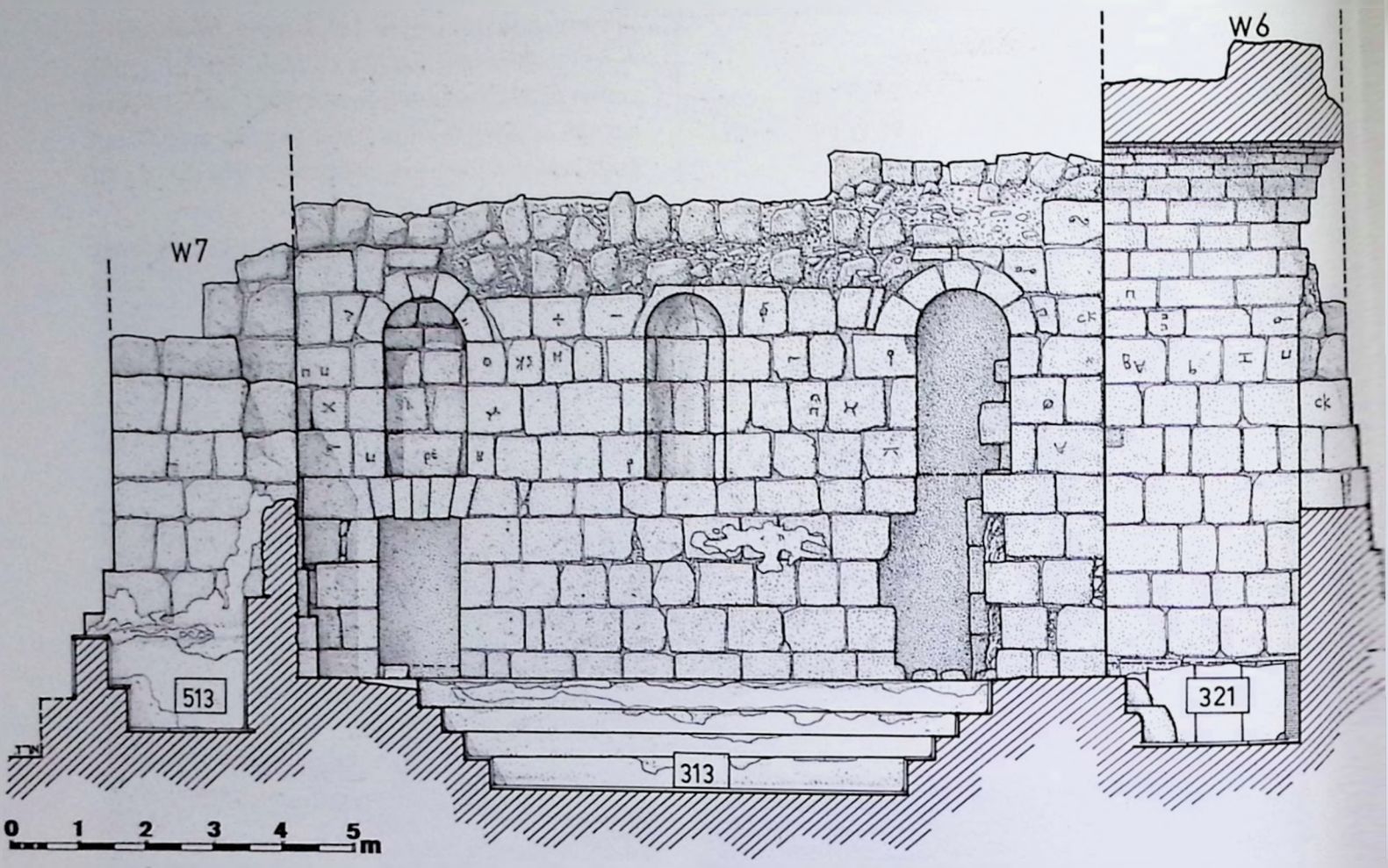


Fig. 72. View of the northern face of W5.

of the rectangular opening, the function of which is not clear, was intentionally blocked.

W60 is preserved to a height of 2 m and, except for the absence of a rectangular opening, is identical to W33. In contrast, the original W58 has not been preserved and a later wall has survived in its place. The three walls between the piers of W6 were probably not built to the full height of the arches, but rather up to a level that would allow for the installation of three large windows beneath the arches. The many fragments of windowpanes found under the arches corroborate this hypothesis.

The southern short wall (W5) of Area C, which separates it from Area B, is preserved to a height of 6.7 m (Fig. 72). Its thickness varies; the central part is narrow (1.1 m) in comparison to the 2-m-thick eastern part, in which a passageway leading into neighboring Area B was built.

Three niches designed to hold statues were built in the upper part of W5 (Fig. 73). The central niche is semicircular, measuring 1.1 m in diameter, and its dome is monolithic. The side niches are rectangular, measuring 0.7×1.2 m, and have barrel-vaulted ceilings. Their bases are 2.5 m above floor level and the niches themselves are 2.3 m high; thus, each could hold a life-size statue.

Beneath the eastern niche, the passageway into Area B is preserved in its entirety. The width of the entrance is 1.2 m and its height is 2 m. Beneath the western niche, a later opening was cut crudely into the wall to hold a lead pipe, parts of which were found during the excavation of Area B.

The eastern long wall (W7) of Area C is preserved to a height of 4 m (Fig. 74). Like W6, it is made up of three free-standing piers and a fourth engaged pier at the eastern end of W5. The width of the lower courses of W7 is 3 m. Its western and eastern faces are built of stepped courses, similar to those in W6 on the west, the width decreasing to 2.7 m in the upper courses.

The piers of W7 are set at fixed intervals of 4 m. The northernmost pier is relatively small. Its



Fig. 73. Southern part of Area C (Hall of Piers) and the wall with niches (W5), looking southwest.

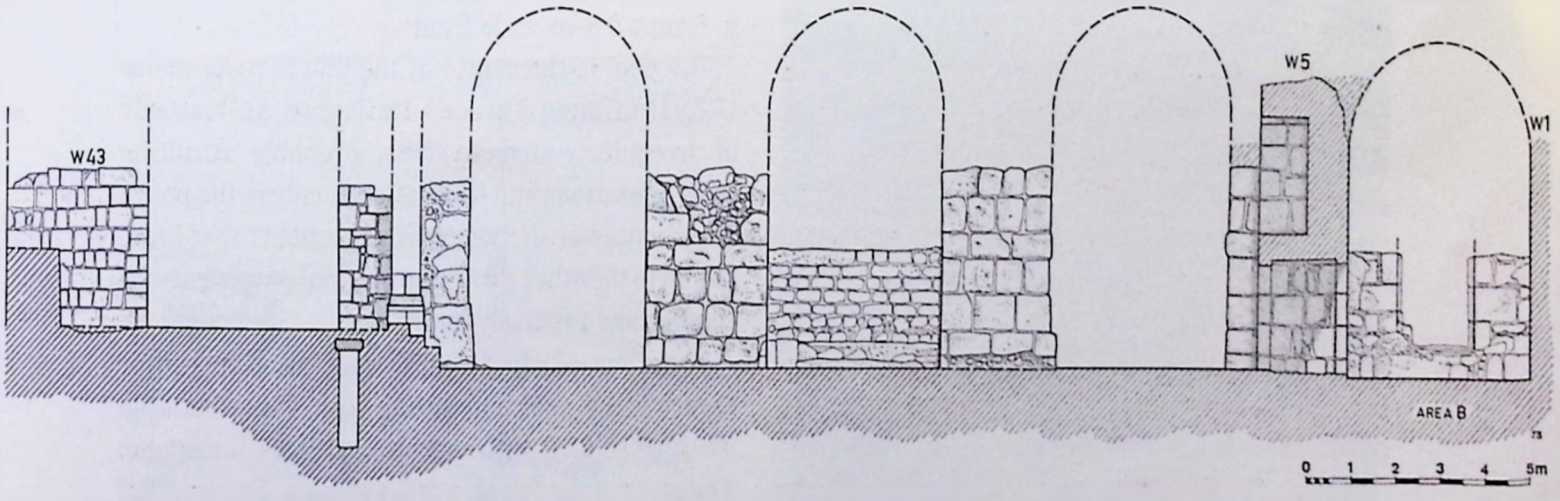


Fig. 74. View of the western face of the eastern row of piers (W7) and cross section of the width of Area B (passage rooms).

measurements in cross section are 1.7×3.0 m and from it emerge engaged walls extending in three directions: W80 which is part of Area H, W43 which is part of the passageway into Area C, and a western engaged pilaster which is essentially part of the columned portal (see below). The next two piers are

identical to each other, measuring 2.5×3 m in cross section, and are preserved to a height of 3.8 m.

It appears that the northern space (L. 518) between the piers of the eastern wall served as a passage leading into neighboring Area E. In this space, measuring 4 m in width, remains of a floor were discovered *in situ* (see below).

A bathtub was built in the central space (L. 513), access to which was gained from Area E. The southern space (L. 515), between the third and fourth piers, was apparently also blocked. The remains of 2-cm-thick marble revetment slabs of a bench or built parapet were found along this space (Fig. 75). The core of the parapet, made of fieldstones and grayish mortar, is preserved on its inner side. Although only ca. 0.2 m of the bench or parapet is preserved above the walkway, we estimate that its original height was ca. 1 m or, in fact, any measurement that did not permit free passage between the two halls in this section.



Fig. 75. Remains of the marble revetment of the parapet between Areas C and E (L. 511), looking northeast.

The main part of Area C is occupied by a large bathing pool surrounded by a 1.4-m-wide walkway paved with large well-smoothened marble slabs (maximum size 0.8×1.8 m). The level of the walkway is -173.10 – the same as that of the passageway from Area C to neighboring Area E. Of the floor of the passageway we exposed a section of alternating bituminous stone and marble tiles, in the center of which square tiles (0.15×0.15 m) were laid diagonally to create a 2×2 m carpet (Fig. 76).



Fig. 76. Remains of pavement of the passageway between Areas C and E (L. 515), looking south.

Around it slabs of smoothened limestone were laid to form a 0.5-m-wide frame.

The pool in the center of the hall is rectangular (7.7×16 m) and 1.4 m deep. Its floor (L. 313) is made of irregularly-shaped slabs, probably resulting from alterations and renovations made in the pool's pavement over the years. It is probable that here, too, as in the other pools, the original pavement was regular and precisely laid.

The four skirting steps were used both for entering the pool and sitting in it while bathing. They were clad with marble and local limestone. The riser of the top step is 0.4 m high. The tread of the second step is especially wide – 0.4 m – and its riser is 0.3 m high (this step was possibly intended for sitting). The tread of the third step is 0.3 m wide and its riser is 0.3 m high, while the tread of the lowest, fourth step is 0.35 m wide and its riser is 0.5 m high.

The water was probably fed into the pool through a single marble fountain; the remains of its base were found on the top step on the northern side of the pool, along the central long axis of the hall. The base of the fountain is built of mortar and small stones; it is rectangular (0.3×0.5 m) and its height is the same as that of the step – 0.4 m.

The fountain, which is broken into two, was found on the floor of the pool (L. 313), beneath the late floor that was laid here in the Byzantine period. The two parts were found to fit together, thus enabling us to reconstruct the fountain in its entirety (Fig. 77). It is shaped like an altar, is 0.85 m high, and its base and top measure 0.4×0.4 m in cross section. The middle part is narrower, measuring 0.27×0.27 m in cross section. The water flowed through an opening on one side of the fountain, as was customary; around the opening was a defaced relief of the head of a man or a lion.

The water was probably led to the fountain via a lead pipe, a 2-m-long section of which was found beneath the floor, in the middle of the northern part of the walkway (Fig. 78). The pipe is constructed in the same fashion as those in the rest of the complex: its diameter is 9 cm and a 1-cm-thick welding ridge



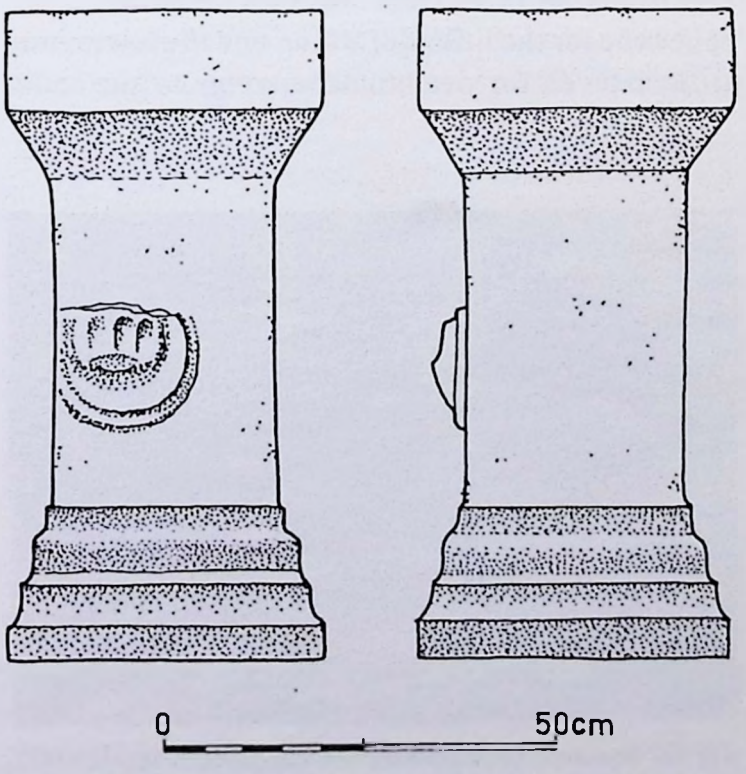


Fig. 77. The fountain found in the main pool of Area C.



Fig. 78. Lead pipe section at the northern end of the walkway in Area C (Hall of Piers), looking east.

runs along its upper part. The pipeline runs parallel to the pool and thus appears to have been part of the bath's cold-water supply system. This discovery points to the fact that the pool in question was for cold-water bathing and that Area C was a kind of *frigidarium*.

The pool was emptied via an outlet at the bottom of the western staircase. This outlet is the beginning of a channel 0.4 m wide. It is probable that from this channel the water flowed directly into the main drainage channel of Area F.

Many artifacts were found in the pool (L. 313), including coins, which were important primarily for dating the late floor of Phase II that covered the pool. L. 313 also contained pieces of beautiful glass mosaics that decorated the building. Several marble panels and capitals, as well as a fragment of an inscription on a marble slab, were also revealed there. All these belonged to the initial phase of the hall, and after the destruction, apparently caused by an earthquake, the pool was filled with rubble and repaved.

Three small bathtubs were built between the piers of W6. These tubs were used in parallel with the central pool and, like it, also went out of use in the Byzantine period (Phase II). The northern bathtub (L. 305) measures 2×3.6 m and is 1 m deep (Fig. 79). Its floor is made of slabs of bituminous stone ca. 0.5×0.6 m in size. A thin layer of whitish lime plaster covered the floor. The sides of the tub, 0.2 m thick, were built of bricks and clad with slabs of limestone to prevent seepage. Most of these slabs, which are 2.5 cm thick, are missing.

Descent into the tub was via two semicircular corner staircases. The radius of the top steps is 0.4 m and their risers are 0.25 m high. The second steps are larger – 0.3 m wide and 0.35 m high. An intermediate step or shelf, 0.25 m wide and, like the lower step, 0.35 m high, was built along the eastern side of the tub.

Water was apparently led into this tub via a pipe, the remains of which were not discovered. A small opening at the top of the tub's rear wall could have served as the inlet. This opening is rectangular and measures ca. 10×20 cm. On the rear side of the tub, at floor level, a small outlet (0.1×0.1 m) drained the water into the main drainage channel of Area F.

The middle bathtub, between the second and third piers (L. 325), resembles the northern one in shape and detail. It measures 2×4.2 m and is 1 m deep. Descent into the tub was via two semicircular corner staircases.

The southern bathtub, situated between the third and fourth piers (L. 321), resembles the first two. It interior dimensions are 2×3.9 m and it is 1 m deep (Fig. 80). This tub also had two semicircular corner staircases, its floor was made of bituminous limestone, and its walls were built of bricks clad with limestone slabs that have not been preserved. The rear wall of this tub has two openings – the upper one for the inflow of water, and the lower one, at floor level, for draining the water to the main



Fig. 79. Northern bathtub between the piers of W6 (L. 305), view from above.



Fig. 80. Southern bathtub between the piers of W6 (L. 321), looking southwest.

drainage channel in Area F. The lower opening, measuring 0.1×0.15 m, is located at the center of the wall, while the upper one, measuring 0.15×0.2 m, is slightly to the south of the center.

All three bathtubs were covered with the late tile floor of Phase II (see below). Among the artifacts found inside the tubs beneath this floor are fragments of glass mosaics and frescoes, which were part of the architectural decoration of the hall's walls and its ceiling in the original building phase.

The level of the floor in the northern part of Area C is ca. 0.7 m higher than that of the floor at its center. In order to surmount this difference in height, three steps were built between the two parts of the hall. The two upper steps, on which the columned portal was built, are preserved in their entirety (Fig. 81). They are made of finely-dressed basalt stones. The tread of the top step is 0.5 m wide and its riser is 0.2 m high. The tread of the middle step is 0.4 m wide and its riser is also 0.2 m high. Only remains of the foundation beneath the third step were found, and it was composed of a mixture of mortar and small stones. The line where the third, missing, step ends is marked by the remains of several pavement slabs of the walkway preserved *in situ* around the central pool.

In the area north of the columned portal (L. 308) part of the original marble floor has been preserved. In the center of this floor is a "carpet" featuring a geometric *opus sectile* decoration located on the hall's long axis, indicating that the floor was planned as part of the original building. The dimensions of the central carpet are 3.8×3.8 m. Built of white, gray and red marble tiles, the pattern is surrounded by a frame of white marble slabs measuring 0.45 m in width and up to 1 m in length. The carpet itself is composed of crisscross bands of white marble slabs. At every intersection, a small red marble tile measuring 0.23×0.23 m was inserted. The spaces between the bands were filled with gray marble tiles measuring 0.45×0.45 m. On both sides of the frame were remains of sections of yet another decorative pattern made up of square white and gray marble tiles (0.21×0.21 m) arranged diagonally.

In addition to the surviving parts of the central carpet, other sections of the pavement were found *in situ* in the central alcove (L. 314) between pilasters W39 and W42 (Fig. 82). These white



Fig. 81. Columned portal and debris of elements on the late tile floor (L. 306), looking north.

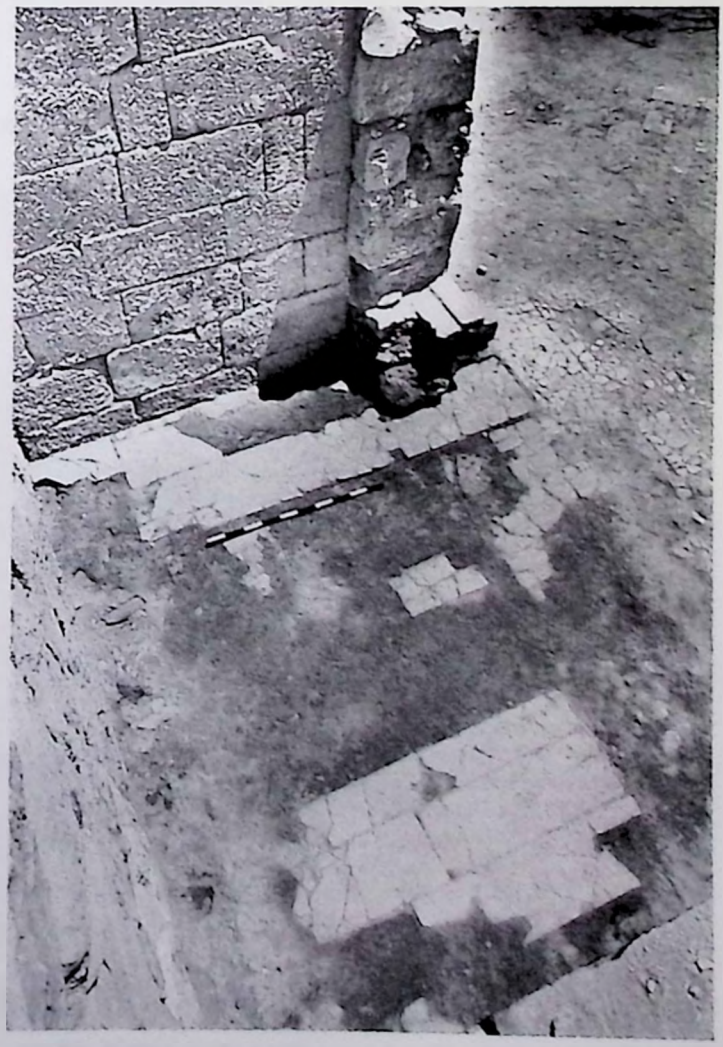


Fig. 82. Marble floor in the central alcove (L. 314) at the northern end of Area C (Hall of Piers), looking east.

marble slabs were 0.35-0.45 m wide and up to 1.5 m long. The level of the pavement in this area is identical to that of the *opus sectile* floor (-172.37).

Beneath the floor level of the eastern alcove (L. 315), the foundations of two small walls, W56 and W57, were discovered, and next to them the poorly preserved remains of clay pipes. One wall (W56), built parallel to W40, is 2.5 m long and 0.5 m thick. The second, shorter wall (W57), 1.3 m long and 0.7 m thick, lies perpendicular to it. W57 ends on the same line as pilasters W43 and W39. From this fact and the orientation of these two walls parallel to all the other walls of the structure, we may conclude that they were erected in the Roman period (Phase I), at the same time as the baths complex. It is probable that these two walls formed an installation of some kind, possibly a latrine, since clay pipes were found near the walls.

Also found beneath the marble floor of the northern part of Area C are sections of a subterranean drainage channel (L. 327) running the length of the foundation of the columned portal (Fig. 83). This channel is 1.9 m deep and 0.6 m wide, and one could thus walk upright in it. Its southern sidewall serves as the foundation of the columned portal and therefore especially large basalt stones were used in its construction. The height of its courses is 0.6 m and they are "stepped," i.e., each course recedes ca. 5-6 cm from the course below it. In contrast, the northern sidewall of the channel was built of large fieldstones and mortar. Both sidewalls were coated with a 7-cm-thick layer of plaster mixed with gravel, topped by a 2-cm-thick layer of regular lime plaster. The channel is roofed with 0.8-m-long basalt beams which measure 0.2×0.3 m in cross section.

At its eastern end, beneath the northernmost pier of W7, the channel forks: one branch continues eastward to Area H and the other takes a 90° turn southward. Only a 1.1-m-long section of the eastern branch was excavated. Its width is 0.8 m and its depth is 1.3 m. It is roofed with 0.85-m-long basalt beams. A 1.5-m-long section of the southern branch was exposed. Here the depth of the channel is 1.55 m and its width is 1 m. This section is roofed with a barrel vault. The "fork" itself is roofed with a barrel vault 0.9 m higher than the vault of the southern channel.



Fig. 83. Drainage channel north of the columned portal, looking east.

On the west the channel reaches the foundations of W6 where it turns 90° northward. This part of the channel was exposed over a length of 5.5 m; it is 1.9 m deep and 0.6 m wide. It is built of large hewn stones (0.3×0.65 m). At a distance of ca. 4 m to the north of the turning point, we found the opening of another channel which leads to the west, toward Area F. This channel probably conveyed water to the main drainage channel that extended along the length of this area.

Channels of this type were part of a sophisticated drainage system in the baths complex. In addition to their principal function – draining the pools – they were intended to effectively drain rainwater from the building's roof. For this purpose, drainpipes were built inside the building to drain the water directly into the channels. Drainpipes of this type were discovered next to the northern pier of W7 and in the corner formed by W1 and W13.

We were able to glean some information regarding the ceiling of Area C from the debris found on the floor in the center of the hall (L. 306). The ceiling that had collapsed in the earthquake of 749 (according to the artifacts found there) formed a pile of debris directly overlying the hall's floor. From a cross section through the debris, we were able to determine various details regarding the stones of the ceiling (Fig. 84). The pile of ceiling debris averages ca. 2 m in height, and on top of it a 1.4-2.0-m-thick layer of alluvium has accumulated. The fact that the stones in the debris fell one next to the other is due to the vaulted shape of the ceiling. These are regular tufa stones of the type that the builders of the baths used to construct the ceilings (similar to those found *in situ* in Area B; see below). They are on the average 0.5 m long and 0.2-0.25 m thick. Beneath them we found many pieces of glass mosaics. It appears, therefore, that the superstructures of the building, and perhaps also parts of the ceiling and the arches between the piers, were overlaid with colorful mosaics. Among the rubble we also uncovered many fragments of windowpanes; this find corroborates our assumption that windows of various shapes and sizes were installed in the walls around the hall.



Area E: The Hall of Inscriptions

The Hall of Inscriptions was so named because of the dozens of Greek inscriptions that were found on the marble slabs of its floor. Indeed, these inscriptions are late (the date of the earliest one is the mid-fifth century), but their presence is impressive and makes this hall unique.

Architecturally speaking, one should have named Area E "The Central Hall" because of its location between five different areas: Area H delimiting it on the north, Area C and Area B (the passage rooms) delimiting it on the west, Area A to its south, and Area D to its east. From this layout, it appears that the hall served not only as a bathing hall but also as an intersection from which one could proceed to many parts of the complex.

Area E is an elongated rectangle (Fig. 85). Its length from north to south is 24.4 m and its width from east to west is 8.3 m (interior dimensions). Its overall area exceeds 200 m^2 (more precisely, 202.5 m^2). A large bathing pool (ca. 8×14 m) was built in the southern part of the hall, occupying about two-thirds of this area, and north of it was an entrance area measuring 8.5×10.4 m, paved with marble slabs (Fig. 86).

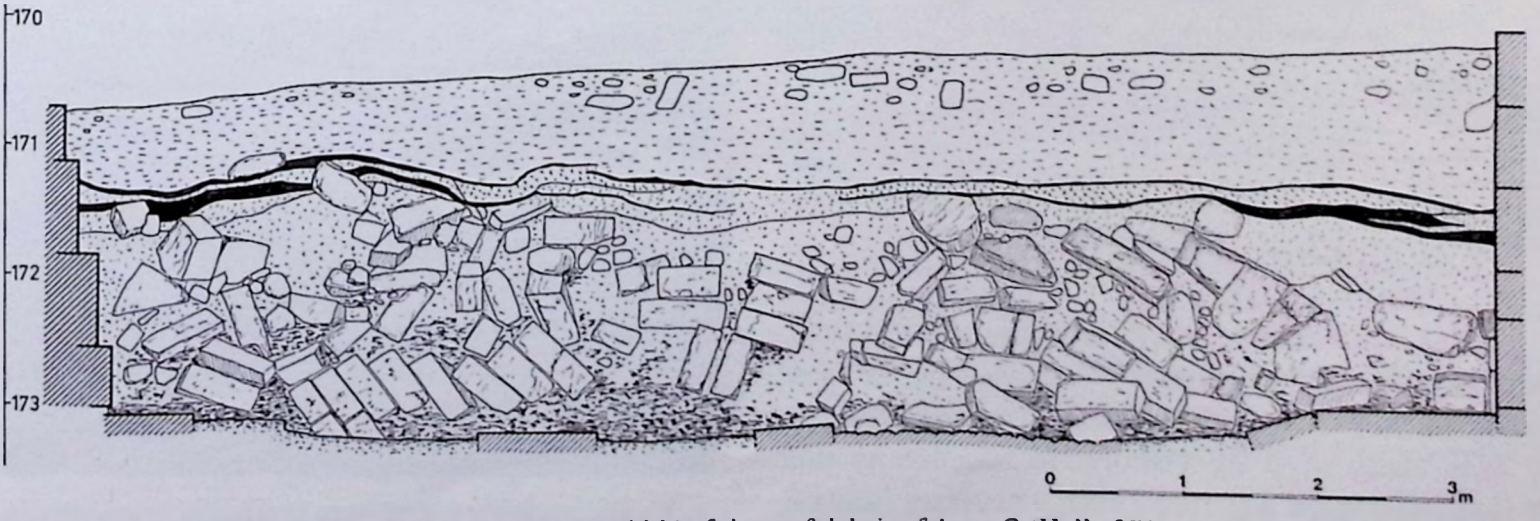


Fig. 84. Photograph and cross section (across the width) of the roof debris of Area C (Hall of Piers), looking south.

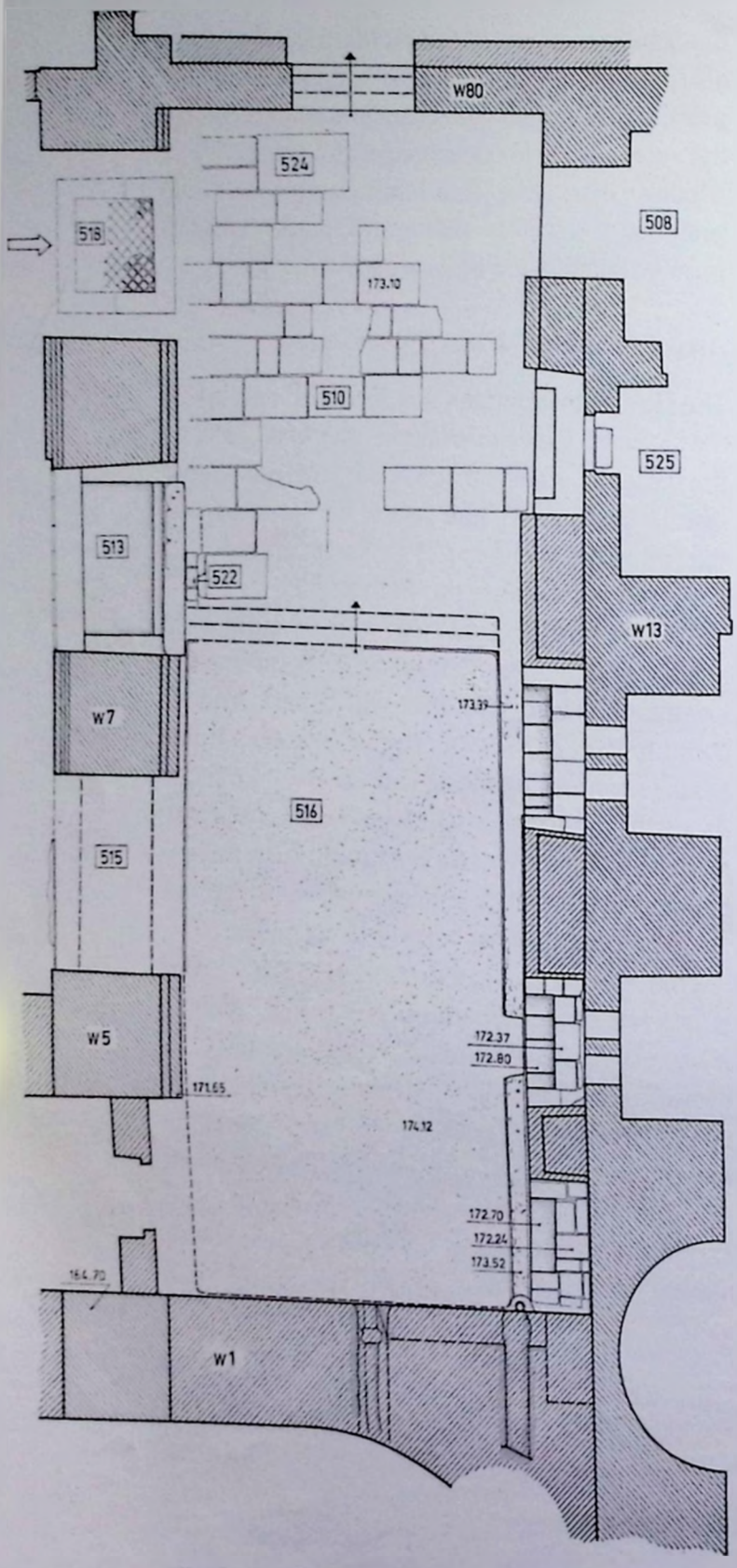


Fig. 85. Detailed plan of Area E (Hall of Inscriptions).

The main entrance to Area E was is set in W80. The width of the entrance is 3 m; the signs of wear on its steps are evidence of the frequent use that was made of it by visitors. In addition to this entrance there was free passage between Areas E and C between the two northern piers of W7. The



Fig. 86. Floor of inscriptions in the area north of the pool (L. 510), looking west.

width of this passageway is 4 m and it permitted the bathers to move freely between the two halls. As noted above, the other spaces between the piers of W7 were blocked.

The southward continuation of W7 is W10, separating Area E from Area B to its west. This wall will be described below in the section dealing with the remains in Area B. It is located between two pilasters integrated into the walls of Area B, but technically they were built and functioned as part of W7.

The southern wall (W1) of Area E is one of the best preserved walls in the complex (Fig. 87), attaining a height of 8.4 m above the floor of the hall and 9.5 m above that of the pool. W1 is essentially part of a longer wall shared by Areas E and B and



Fig. 87. The southern end of Area E (Hall of Inscriptions), including the southern wall (W1), looking south.

separating them from Area A. The thickness of this wall which supports the ceilings of three halls is 2.6 m. A hot-water channel runs through its foundations, bringing water to the pool in Area E.

An examination of the northern side of the wall, in the section facing Area E, revealed that the wall at one time underwent thorough renovation (Fig. 88). This emerges from the relationship between the wall's foundations and the plaster floor in the hall's pool. One can clearly see that the plastered floor of the pool runs beneath the foundations of the wall, i.e., the foundations were built on top of the floor and therefore postdate it. Another instructive fact regarding the renovation of this wall is that most of the masonry in this section consists of limestone, in contrast to the other parts of the wall that are built of basalt. It appears that the wall was rebuilt following an earthquake, perhaps the one mentioned explicitly in Inscription no. 1 which is dated to the mid-fifth century C.E. (Phase II; see below). This seems plausible since the wall's foundations were hidden beneath the floor bearing the inscriptions, which covered the original pool from the mid-fifth century on. Therefore, the face of the wall in its present state, as exposed in the excavation, belongs to Phase II; however, one may also assume that the wall's core and foundations belong to the original construction stage (Phase I).

An opening for a side channel was discovered adjacent to the southeastern corner of the wall's foundations. It is located 0.7 m above the pool's floor, and is 0.5 m wide and 0.7 m high. The course of the channel and its function in the complex have not been clarified due to difficulties experienced in its excavation; however, it may be assumed that this channel drained water from the pool.

At the upper eastern end of W1, next to the contact with the eastern wall (W13), remains of an arch were found integrated into the wall. The span of the arch is 1.4 m, and it appears that it functioned as a kind of window or ventilation opening in Phase I of the building. Later on, perhaps in Phase II, this arch was completely blocked.

At the upper western end of the northern side of W1, in the section facing Area E, a rather small but very important section of a ceiling vault was preserved *in situ* at the top of the pier engaged in the wall. In a sketch of the wall's surface (see above,

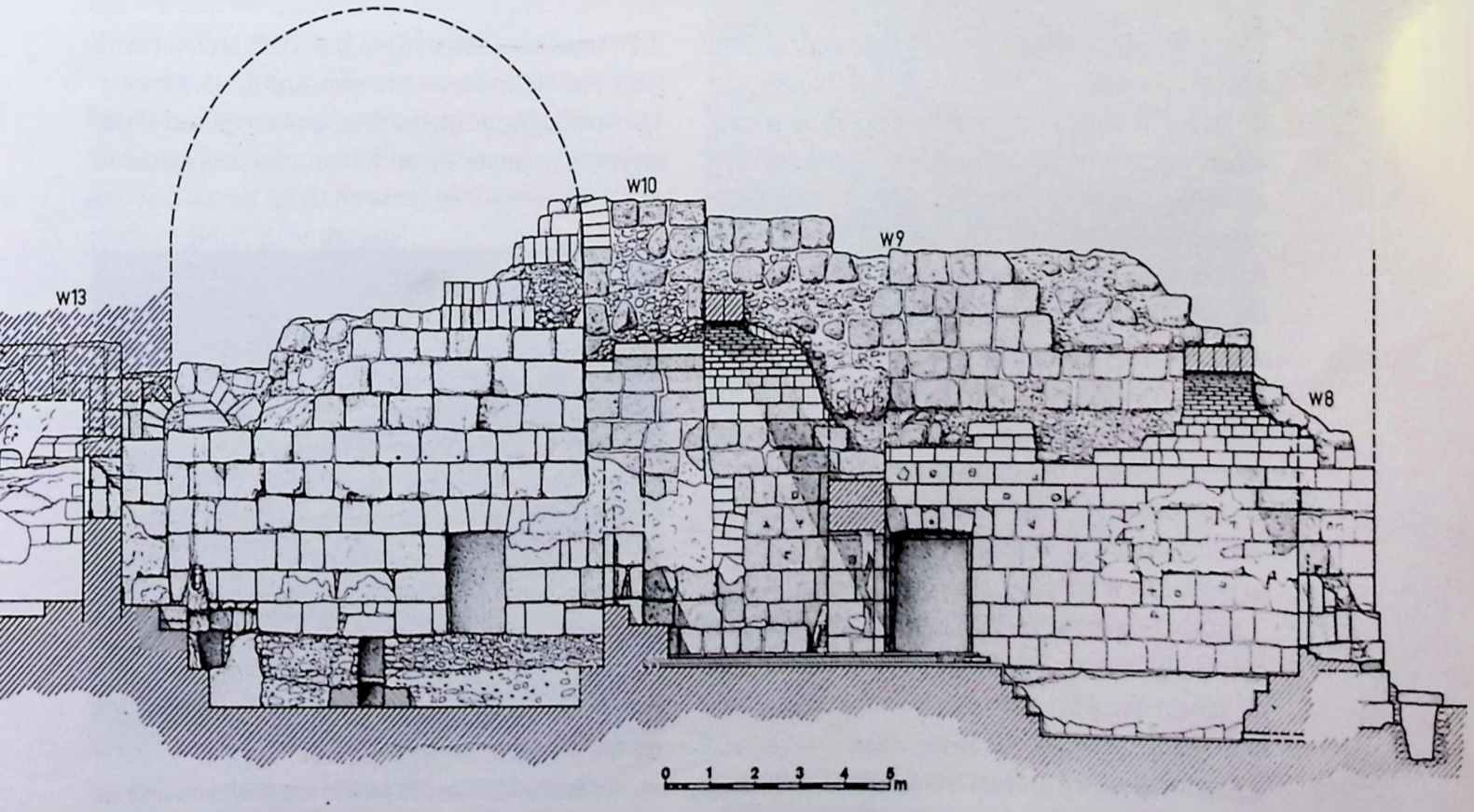


Fig. 88. View of the northern face of W1 (Areas E and B).

Fig. 88), one can identify the first four tufa voussoirs of the vault (its eastern side is not preserved) which are rectangular, each 0.6 m long and 0.2 m wide.

The preservation of the vault stones at the top of the southern wall of the hall is very important for the reconstruction of its ceiling. They indicate the exact location of the vault's spring (-165.55), which is 7.5 m above the hall's floor. The span is 9 m and thus the vault attained a height of ca. 12 m above floor level. As will be shown later, we assume that the ceiling of Area C was of the same height.

The eastern long wall (W13) of Area E is preserved to a maximum height of 3.6 m (Fig. 89). presented in the description of Area D). The entrance at the northern end of the wall links Area E to the two apsidal rooms east of it (these rooms will also be discussed in the description of Area D).

The southern entrance is preserved in its entirety (Fig. 90) and is 1.15 m wide and 2.1 m high. Its lintel consists of six stones forming a flat arch, similar to the ones in other entrances of the complex. In front of the entrance, two bench-shaped steps were built between two engaged pilasters, but, as noted above, both the steps and the pilasters belong stratigraphically to Phase II. The northern entrance is a wide passageway (2.3 m); it was blocked at a later stage.

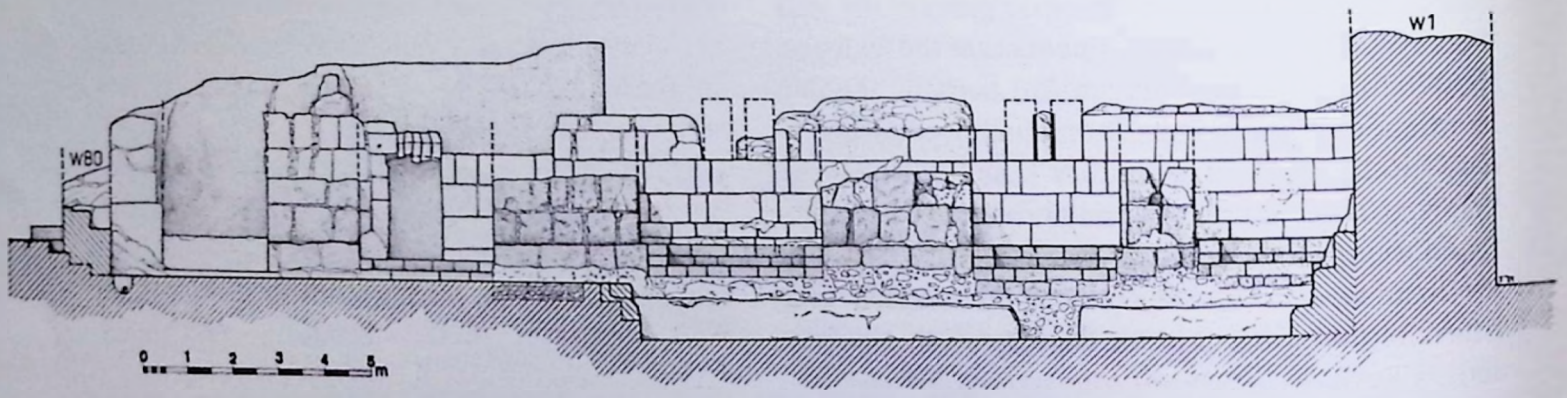


Fig. 89. View of the western face of W13.

This wall, which separates Area E from Area D to its east, is built of large limestone blocks and therefore technically belongs to Area D. At a later stage, four pilasters of different sizes were engaged along the length of the wall. It seems that these pilasters were built in Phase II together with the marble floor covering the pool (see below). Before the pilasters were added, the space between this wall and the eastern sidewall of the pool was possibly designated as a walkway. The width at the base of the pilasters is possibly 1.4 m, corresponding to the width of the other walkways in the complex. This assumption could not be verified, since it was difficult to examine the foundations of the pilasters.

As mentioned above, W13 is built of large finely-dressed limestone. The height of each course is 0.6 m, except the fifth course, which is even shorter, having a height of only 0.35 m.

An entrance and at least two windows were built along W13 (a discussion of the windows will be

The northern part of Area E (L. 510) is paved with large marble slabs, ca. 1 m wide and 0.5-1.6 m long. The bedding beneath the floor was composed of two layers. The upper layer, 0.1 m thick, consisted of



Fig. 90. Entrance in W13 between Area E (Hall of Inscriptions) and its southern apsidal room, looking east.

light gray mortar, with no additives; beneath it was a ca. 0.3-m-thick layer of dark gray, harder mortar mixed with small fieldstones. A similar bedding was found beneath the pool floor in the hall.

The main bathing pool, occupying the southern part of Area E (L. 516), is rectangular, measuring 14.4 m from north to south and 8 m from east to west. It is up to 1.1 m deep and thus its overall volume was approximately 125 m^3. The pool was entered from the north, probably via a staircase built to its full width. In the course of the excavation, only the eastern end of the lowest step was exposed (Fig. 91); however, its poor preservation does not permit us to determine the precise shape and dimensions of the steps.

The pool's floor and walls are coated with dark gray plaster (in contrast to the floors of the other pools which were made of slabs of various types of stone). A probe beneath the floor revealed that it is ca. 0.3 m thick and is made up of two layers: a 0.2-m-thick lower layer of fieldstones and gray mortar, and an upper layer of light gray plaster measuring 0.1 m in thickness. The surface of the upper layer is well smoothened as are the pool's plastered walls.

A shelf 0.5 m wide and 0.7 m above the pool's floor was built along the entire length of the pool's eastern sidewall, except for one short section. The length of this section is 1.2 m and it is located ca. 5 m north of the pool's southeastern corner. The function of this shelf, as well as the purpose of the break in its course, is not clear; we may assume that the bathers sat on it. No shelf was found along the western sidewall of the pool.



Fig. 91. Northeastern corner of the central bathing pool of Area E (Hall of Inscriptions), looking east.

The water from the hot spring was led into the pool via a water channel that issued from the elevating pool (Area G), skirted the pool of Area A, passed through the foundations of W1, and entered the pool of Area E. This channel is 0.95 m wide and 1.3 m high (Fig. 92).

In addition to the main pool, a bathtub, located in the space (L. 513) between the two central piers of W7, was uncovered (Fig. 93). The tub is preserved



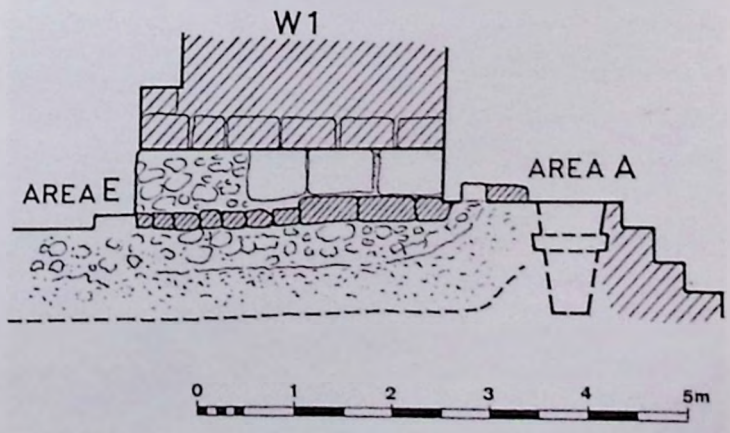


Fig. 92. Cross section of the channel conveying the spring water to Area E (Hall of Inscriptions), beneath W1.

almost in its entirety (Fig. 94); it is rectangular in shape, and its interior measures 3.2 m in length and 2 m in width. Its depth from the top of the parapet is 1.2 m, and thus its maximum capacity was ca. 7.5 m^3. The tub is well built. Its floor was made of well-smoothened slabs of bituminous limestone, of the type used in other tubs. The walls were covered with a 0.2-m-thick layer of mortar topped by a 2.5-cm-thick layer of hydraulic plaster. The water in the tub stood at a level slightly lower than the height of the front wall, i.e., 1.1 m above the floor (according to the waterline on its walls).

The rear wall of the tub, separating it from the adjacent hall (Area C), rises 1.7 m above the floor and is 0.8 m thick. This high wall was important for creating a 1-m-high safety parapet along the walkway of Area C. (A partition wall was built on the parapet at a later stage (Phase III) in order to prevent eye contact between the two halls.)

The front wall of the bathtub is lower – 0.7 m higher than the marble floor – and 0.55 m thick. Its face is clad with fully preserved marble slabs. A step, also clad with marble, was built along the interior of this wall. It is 0.25 m wide and rises to a height of 0.5 m above the tub floor. This step had a dual function, facilitating the bathers' entry into the pool and serving as a seat in the water. The high quality of the tub's construction corroborates our assumption that it was built as part of the original baths complex.



Fig. 93. Bathtub between the two central piers of W7 (L. 513), looking west.

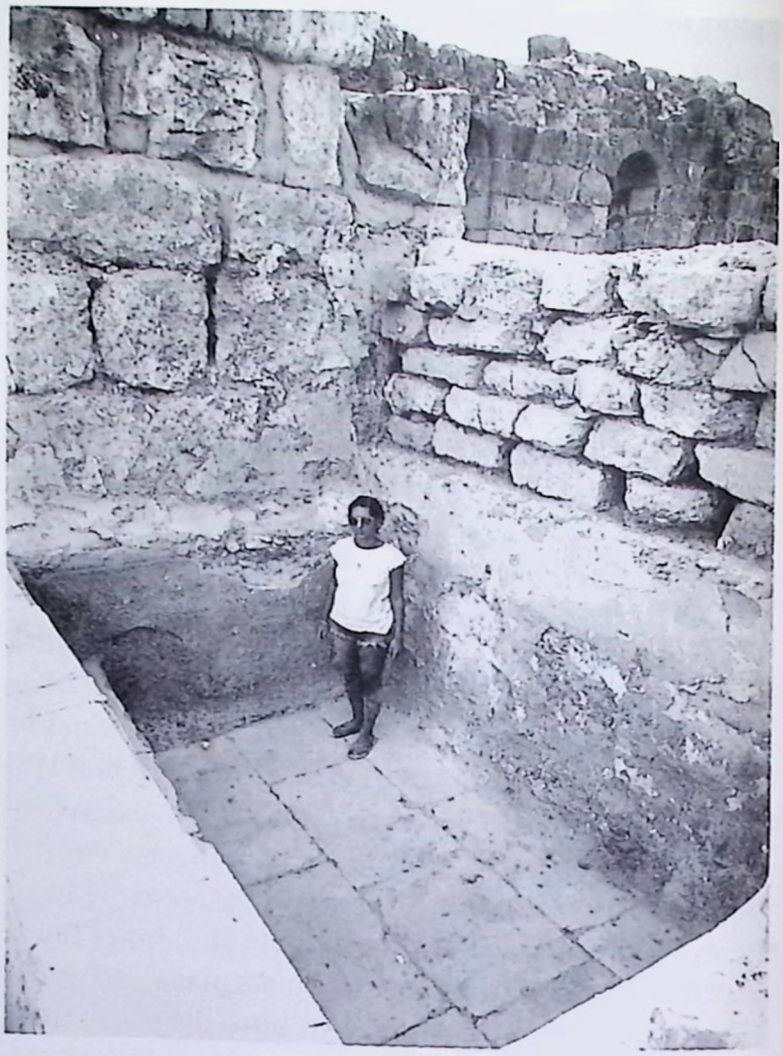


Fig. 94. The interior of the bathtub in W7, looking southwest.

In a probe conducted along the line between the bathtub's front wall and the marble floor of the hall (L. 522), an earlier floor was exposed, the remains of which neatly abut the wall. The level of this floor is ca. 8 cm lower than that of the marble floor, and thus it perhaps represents the original pavement that preceded the floor with inscriptions (which, as mentioned, has been dated to the mid-fifth century). In a close-up photograph of the probe area, the tub wall and the early pavement slabs next to it are visible on the left, and the marble slabs of

the floor with the inscriptions on the right; the marble slabs are damaged at their edges. These intentional breaks were perhaps made in order to lay a clay pipe in the Umayyad period (see below).

The water was possibly brought to the tub via a pipe, the remains of which were found in the northern wall. At the top of the western end of this wall, a section of lead pipe with the standard diameter of 9 cm was found *in situ*. It links up with a section of clay pipe with a similar diameter, which probably branched out to the pool, but no actual sherds of this intersection were found. The clay pipe continued northward along the western side of the pier, to an unknown destination.

Many artifacts were found in the fill of the tub, including a rich assemblage of wall mosaics. Many pieces of glass mosaics were also discovered on the floor of the main pool (L. 516) that was covered, as noted, in the Byzantine period. These mosaics most probably decorated the walls of the hall and perhaps also its vaults. In the earthquake of 749 parts of the wall mosaics fell off the walls into the tub (L. 513).

As mentioned above, not only was passage between the two central piers of W7 blocked by the rear wall of the tub, but the space between the two southern piers (L. 515) of W7 was also apparently closed off by a built parapet. One should bear in mind that this space could not have served as a passage, since all signs indicate that the main pool of Area E was built right up to the parapet. Thus, only the northern space (L. 518) in W7 offered access between Areas E and C.

In the debris covering the floor of the hall (L. 510) we found many vault voussoirs made of tufa. These stones, measuring ca. 0.2×0.6 m, were exposed in rows, as they had fallen (Fig. 95). It appears that they landed directly on the floor and penetrated it with great force. Similar tufa voussoirs were found in the northern part of the hall, forming irregular piles of debris. The large number of voussoirs is evidence of the large-scale collapse of the vault, which is attributed to the earthquake of 749 C.E.



Fig. 95. Debris of vault stones on the floor of Area E (Hall of Inscriptions), looking southeast.

Area B: The Passage Rooms

Area B consists of two rooms connecting Area C and Area A. The area of the passage rooms is small relative to that of the Hall of Piers and the Oval Hall. As we shall see below, the ceiling of Area B was also lower than those of the halls to its north and south.

Perhaps because of its small dimensions, this area contains the best-preserved remains in the entire complex (Fig. 96). Complete sections of the



Fig. 96. Western passage room in Area B, looking east.

vaults spanning the passage rooms have survived *in situ*. The two rooms comprising Area B are aligned in a general east-west direction (Fig. 97). The smaller eastern room (L. 207) is square (4.1×4.1 m). The main entrance to this room was through an opening in its northern wall (W5), connecting it with Area C to the north. Another entrance, in the eastern wall (W10), linked it with Area E to the east. Two additional passageways were built in the wide partition wall (W9) separating the two rooms.

The western room is 9 m long and 5 m wide (interior dimensions). A bathing pool (L. 211) was built in its center, in front of which was a small square (L. 203) that served as a passage. It was thus possible to enter the Oval Hall through a wide opening in the wall (W1) separating the two areas. In the room's western wall (W8), there was apparently a particularly wide window, which formed part of the western facade of the complex.

The northern long wall (W5) of Area B was preserved to its full height (Fig. 98). It is divided into two parts of unequal height and width: the spring of the vault above the part bordering on the western room is 2.9 m high. In contrast, the spring of the vault in the part bounding the eastern room is higher – 4.6 m above the floor, i.e., there is a difference in height of 1.7 m between the two parts of the wall. Moreover, there is a distinct difference in their thickness. The western part is narrower – 1.15 m – while the eastern one is up to 2.0 m thick. The southernmost pier of the eastern row of piers in Area C is incorporated in the eastern part of W5. This pier measures 2.5×2.65 m and protrudes ca. 0.5 m from the wall's northern face. The two lower courses on its eastern side are "stepped," like those in the other piers of W7. As noted above, the incorporation of the pier into W5 testifies to the construction of the complex as a single architectural unit.

The entrance connecting Areas B and C is preserved in its entirety; it is 1.1 m wide and 2.25 m high. At either end of this entranceway were protruding doorposts. Each of the protrusions is

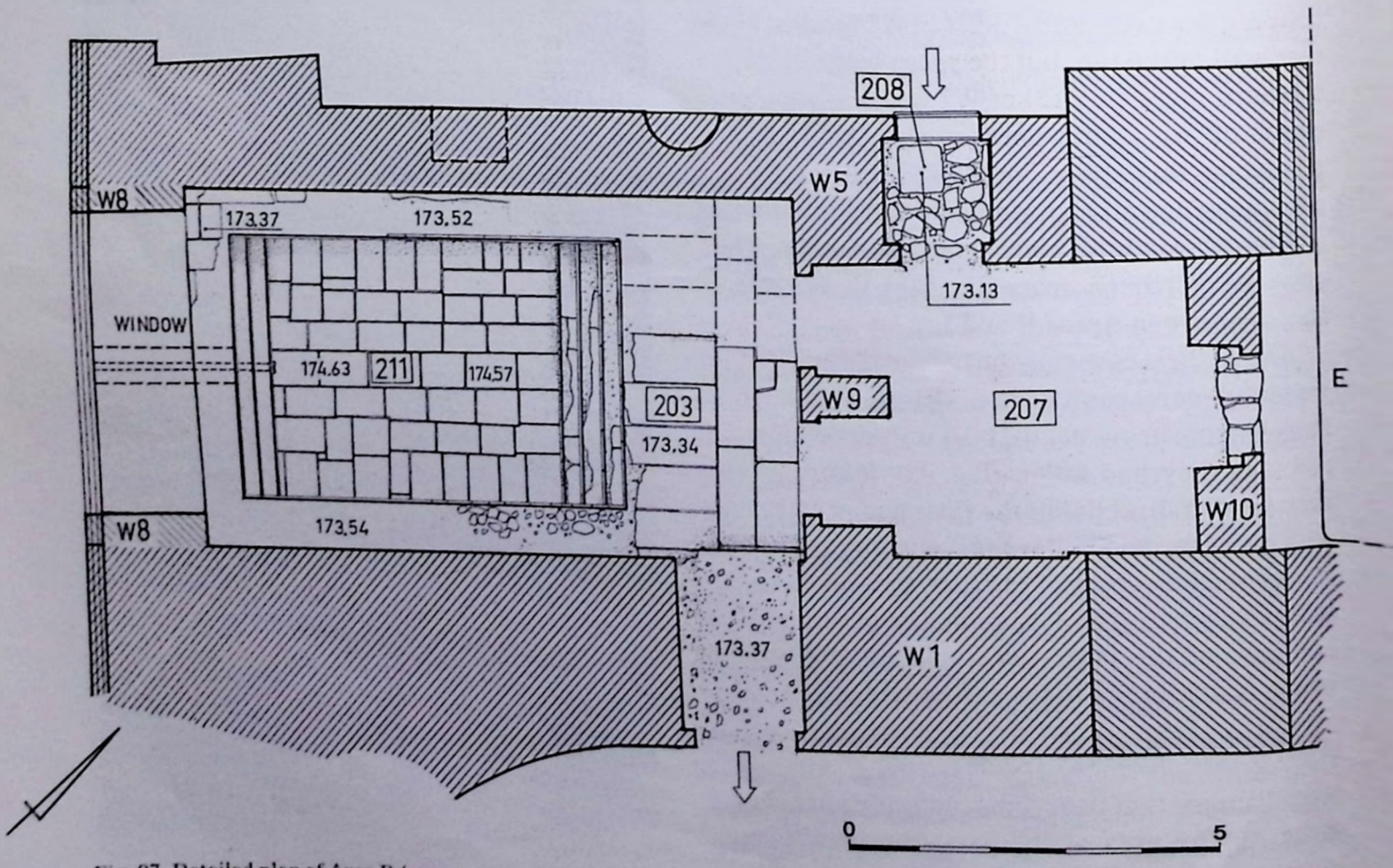


Fig. 97. Detailed plan of Area B (passage rooms).

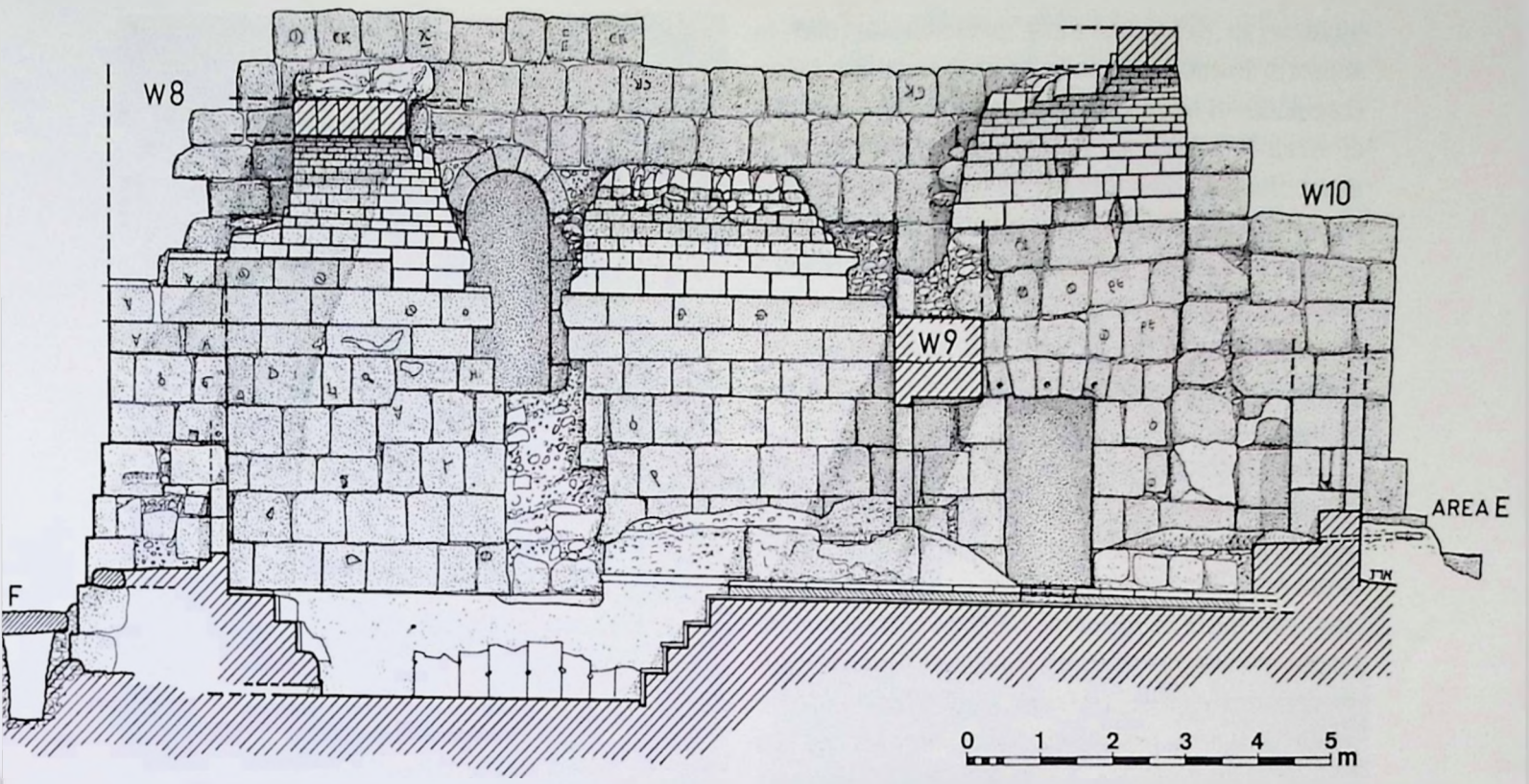


Fig. 98. View of the southern face of W5.

0.25 m wide and juts out ca. 0.15 m. It was thus possible to block entry into the passageway from both sides at one and the same time.

The lintel on the southern side of the entrance is a flat arch made up of five voussoirs. Round holes, 8 cm in diameter and 5-6 cm deep, were drilled in the center of three of the stones – the middle one and the two end ones. Similar holes were also drilled in the lintel stones of the adjacent entrances in W9. As noted above, these holes were perhaps intended for hanging a curtain or some sort of partition for partial closure of the entrances.

The western part is of W5 built of carefully dressed stones, and the 0.6-m-wide courses are fairly uniform. The uppermost course is built of narrower stones (0.4 m) of the same width as the voussoirs. The southernmost pier in the western row of Area C was incorporated into the western end of the wall. The length of the pier is 4 m and it protrudes ca. 0.7 m from the wall's northern face. The three lower courses on the western side of the pier are "stepped," like those in the other piers of W6. On its southern side, the pier juts out ca. 0.3 m from the face of the wall for a length of 1.8 m. This protrusion formed part of the windowframe in the western wall (W8) of Area B.

W8 is part of the "Wall of Windows" facing Area F. It is 1.8 m thick and preserved to a height of 2.9 m. At a later stage, an entrance was built in the center of the wall, connecting Area B with Area F. During Phase I, it appears that there was a large window in this wall. It was 4.2 m wide and its sill was at the height of the third course, 1.1 m above the floor (Fig. 99). As we shall see below, three large windows were exposed at the same level in the western wall of Area A. The upper part of the



Fig. 99. Western face of the wall (W8) delimiting Area B (passage rooms) on the west, looking east.

window in W1 was most probably arched to conform to the arched shape of the ceiling. Many fragments of windowpanes found on the pool floor of Area B helped us to reconstruct this window. Since the pool was already in use during the first phase of the complex's occupation (it was filled with debris in the second phase), we may assume that these glass fragments originated from the large window of the western wall. At a later stage, its size as reduced or perhaps it was completely eliminated.

The southern long wall (W1) of Area B was preserved in its entirety. It actually forms part of the long, massive wall separating Areas B and E from Area A to their south. This wall is also divided into two parts of different heights, corresponding to the two rooms of Area B. The part of the wall bordering the western room attains a height of 3 m, while the one bordering the eastern room rises to a height of 4.6 m above the floor. In the central part of W1 one can see an incorporated pier which is a continuation of the row of piers in W7.

The entranceway in W1 leading into Area A is preserved in its entirety. At its southern end the protruding doorposts are well made. Two pivot sockets, measuring 8 cm in diameter and 7-8 cm deep, can be seen in the lower part of the lintel stones. There are three holes in the lintel's northern face, similar to those in the lintels in the other passage rooms. It should be noted that these holes are covered with a thick layer of plaster, and it thus appears that they went out of use, at least in the last phase of occupation.

W10, delimiting Area B on the east, is a relatively thin wall (0.9 m thick) and is preserved to a height of 2.3 m. A 1.7-m-wide entrance was built in the center of this wall, connecting Areas B and E. This entrance narrows toward Area E, its width on its eastern side being 1.3 m. We may assume that its height was the same as that of the room's other entrances, i.e., 2.3 m.

The central wide wall (W9) is preserved to a height of 3.5 m; its thickness is 1.25 m, and it is built of large roughly-dressed stones (Fig. 100). Both faces of the wall, like the others, are covered with a layer of whitish plaster.

Two entrances were built in W9; they are 1.25 m wide and 2.3 m high. The protruding doorposts on

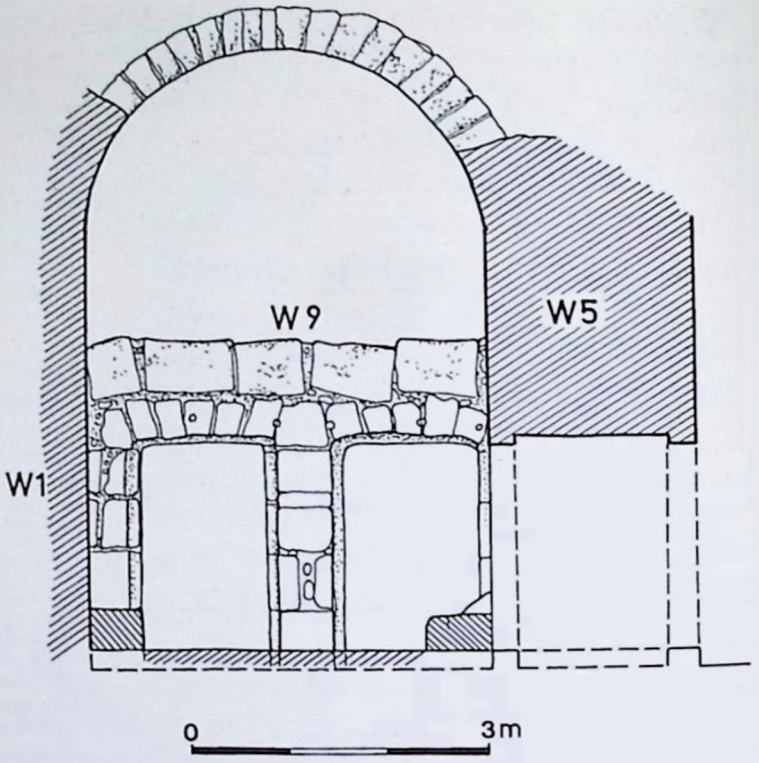


Fig. 100. Lateral cross section of Area B, and view of the eastern face of W9.

their western side are 0.25 m wide and jut out ca. 0.15 m. It was thus possible to close off the passageways between the two rooms of Area B. One additional course of the wall is preserved above the lintels of these entrances. Since this wall separated the two rooms of Area B, we may assume that its original height equalled that of the higher ceiling of the eastern room, i.e., 6.5 m above the floor.

Both rooms of Area B are paved with large and well-smoothened slabs of limestone. In the center of the western room is a rectangular pool (L. 211), 5.8 m long, 3.7 m wide, and 1.25 m deep. Staircases were built across the full width of the pool: the eastern staircase has four steps while the western one has only three (Fig. 101).

The paving slabs of this pool, like those of the other pools in the complex, are made of well-smoothened bituminous stone. The floor slopes down from east to west, toward the western drainpipe. The facing slabs of the pool's sidewalls and steps, which are 6 cm thick and 0.3-0.6 m wide, are also made of bituminous stone. Several slabs on the northern sidewall are preserved to a height of 0.7 m. They were held in place by bronze nails, several of which are preserved *in situ* at a uniform height of 0.3 m above the floor. No water supply



Fig. 101. Bathing pool in the western room of Area B, looking east.

system for the pool was found during the excavation. On the other hand, a lead drainpipe located on the pool's central long axis was preserved *in situ* beneath the western staircase. This pipe, measuring 7 cm in diameter, drained the water to the main drainage channel along the western wall of the complex.

The pool (L. 211), which was covered with a late floor in Phase II, contained many artifacts, including marble fragments and pieces of stucco which were part of the wall decoration (glass mosaics were not found here). Moreover, fragments of different-sized rooftiles were revealed as well as many fragments of windowpanes, which most probably once formed part of the large window in the western wall. In addition, a large trove of lamps and coins was uncovered, which helped us to date the floor covering the pool.

As already noted, the ceiling vaults above each of the two rooms in Area B are of different heights. The vault in the western room, which is a barrel vault built of tufa, is 5.5 m high; the ceiling vault above the eastern room is higher, its apex rising 6.5 m above the floor, i.e., it is ca. 1 m higher than the western vault. Perhaps this difference in height was intentional, *inter alia*, to allow for the installation of a window in the upper part of W9, which separated the two rooms.

Area A: The Oval Hall

The Oval Hall, so named because of its shape, is one of the best-preserved and most complete halls of the site (Fig. 102). Its northern wall (W1) has survived to a height of no less than 8.7 m above the floor, while each of the other walls attains a height

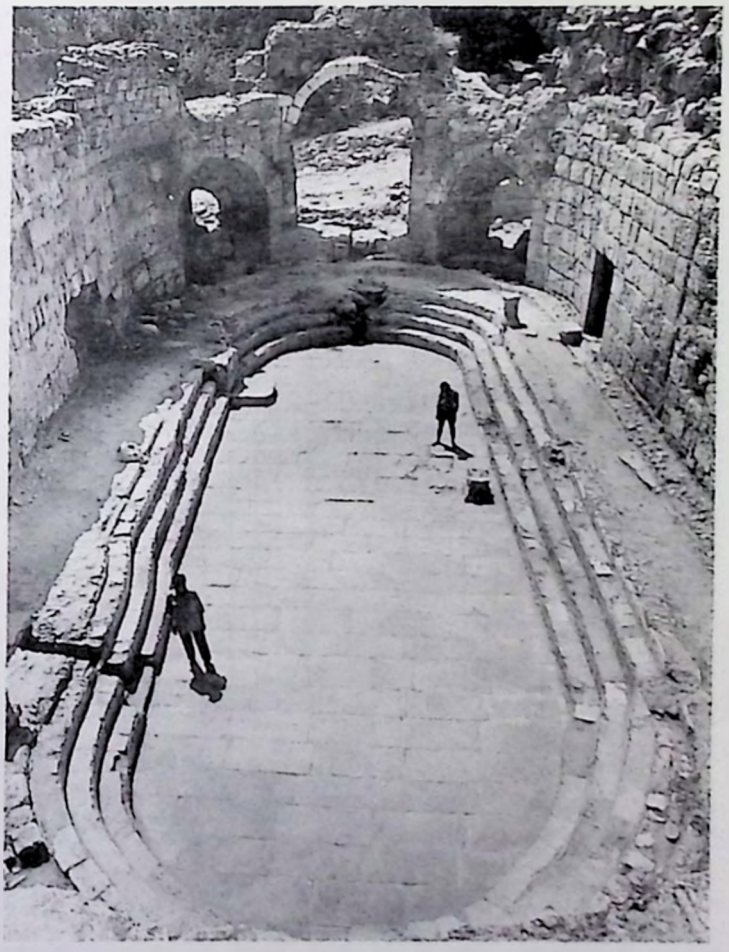


Fig. 102. General view of Area A (Oval Hall), looking west.

of 5-6 m. The length of the hall from east to west is 23.8 m and its width from north to south is 11.9 m (Fig. 103). A stepped 1.2-m-deep bathing pool was built in its center. This pool is preserved in its entirety, as are the four bathtubs in the semicircular alcoves in the rounded corners of the hall.

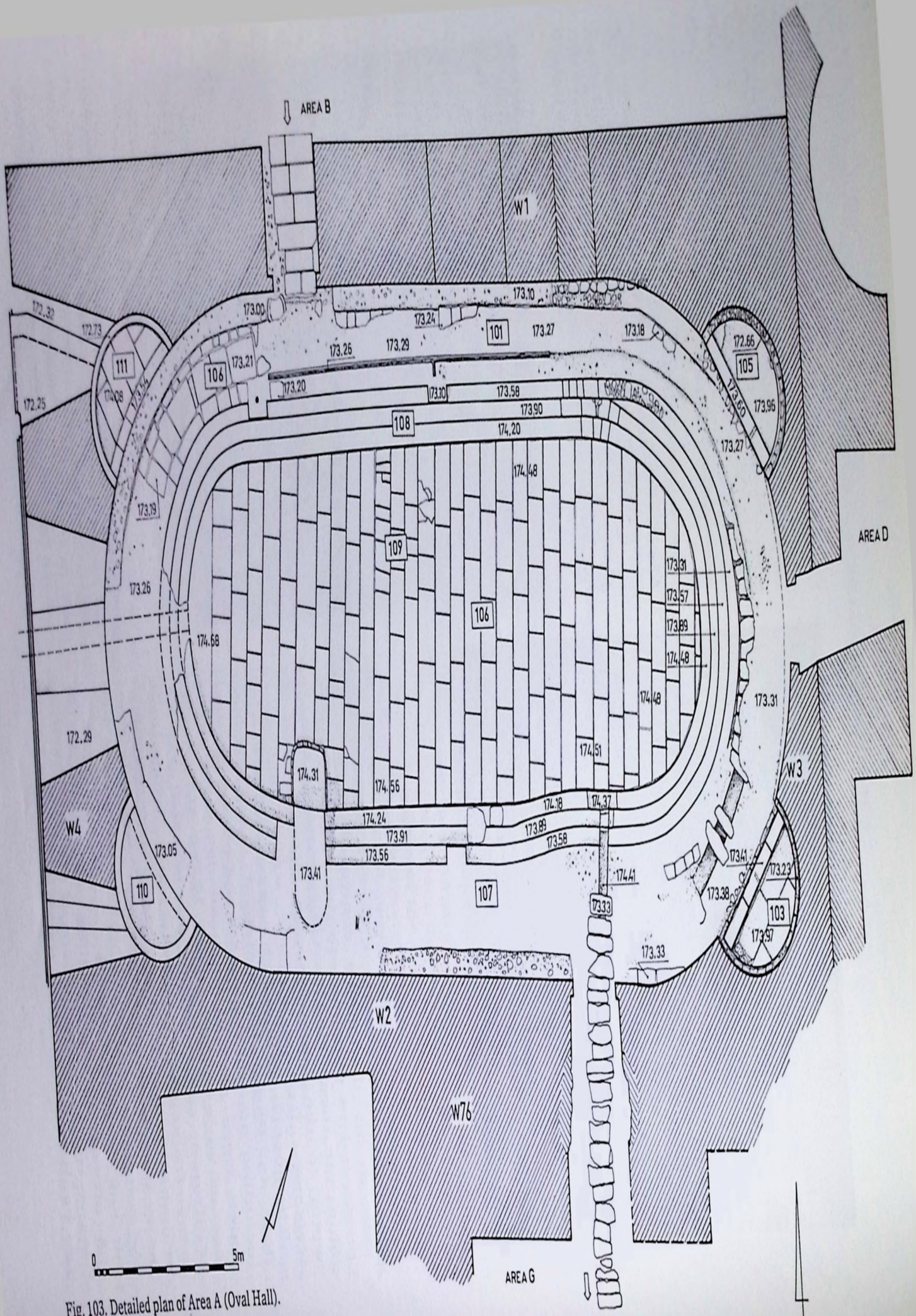


Fig. 103. Detailed plan of Area A (Oval Hall).

The northern wall (W1), 2.6 m thick, is the best preserved one (Fig. 104). Two entrances were built along it – a western one connecting Area A with Area B and an eastern one connecting it with Area E. The width of the western entrance is 1.5 m and its height is 2.4 m. The lintel is composed of seven stones forming a flat arch. The eastern entrance is smaller, 1.3 m wide and 1.9 m high. It was built during one of the later occupation phases; however, as we shall see below, it was probably preceded by some sort of entrance linking Areas A and E.

The western part of W1 is built largely of well-dressed basalt stones laid in straight and uniform courses to a height of up to 5.1 m, where the ceiling vault built of white limestone begins. In contrast, in the eastern part one can discern a massive 6-m-long section of light-colored limestone that was built as a repair (Fig. 105). Close examination of this repair reveals that here, too, there were two different building stages – an early stage in its western half, delineated on either side by vertical architectural seams, and a late stage in its eastern half. The length of the earlier repair is 3.7 m. At the upper end of the seam delimiting it on the east, four stones of an arch are visible. The spring is located at a height of 4.1 m, which is identical to the level where the spring of the arch above the central window in the hall's western wall (W4) begins. One may thus assume that here in the northern wall (W1) there was once an arched entrance that connected Area A with Area E.



Fig. 105. Southern face of W1, looking northwest. Note the architectural seams between the different types of stone.

The later, eastern part of the limestone repair is characterized by its large stones (the height of the courses is 0.7 m). It is ca. 2.7 m long and in its center is an opening linking Areas A and E. This opening, which belongs to a late phase of the complex's occupation, probably served as a window and not

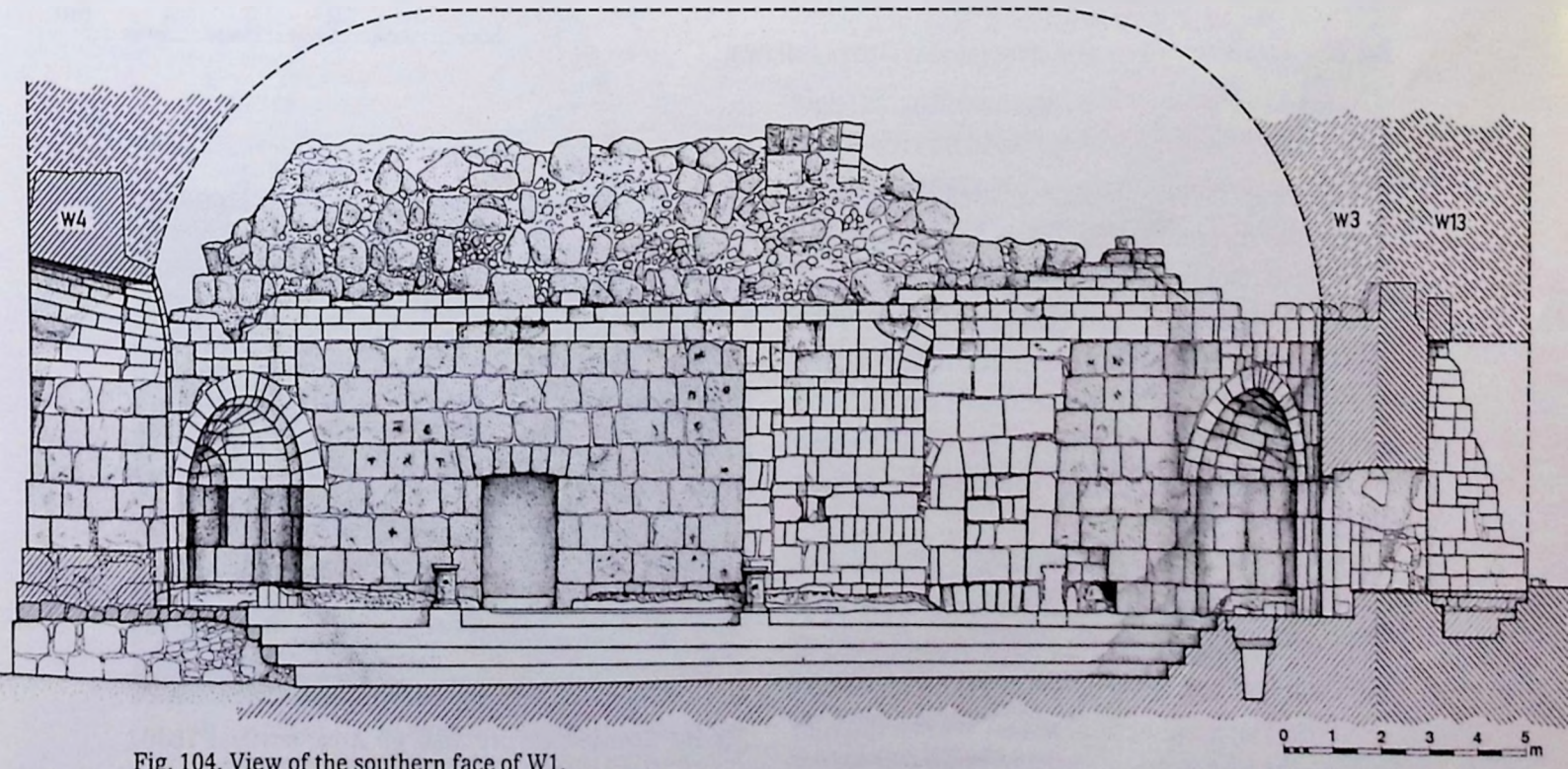


Fig. 104. View of the southern face of W1.

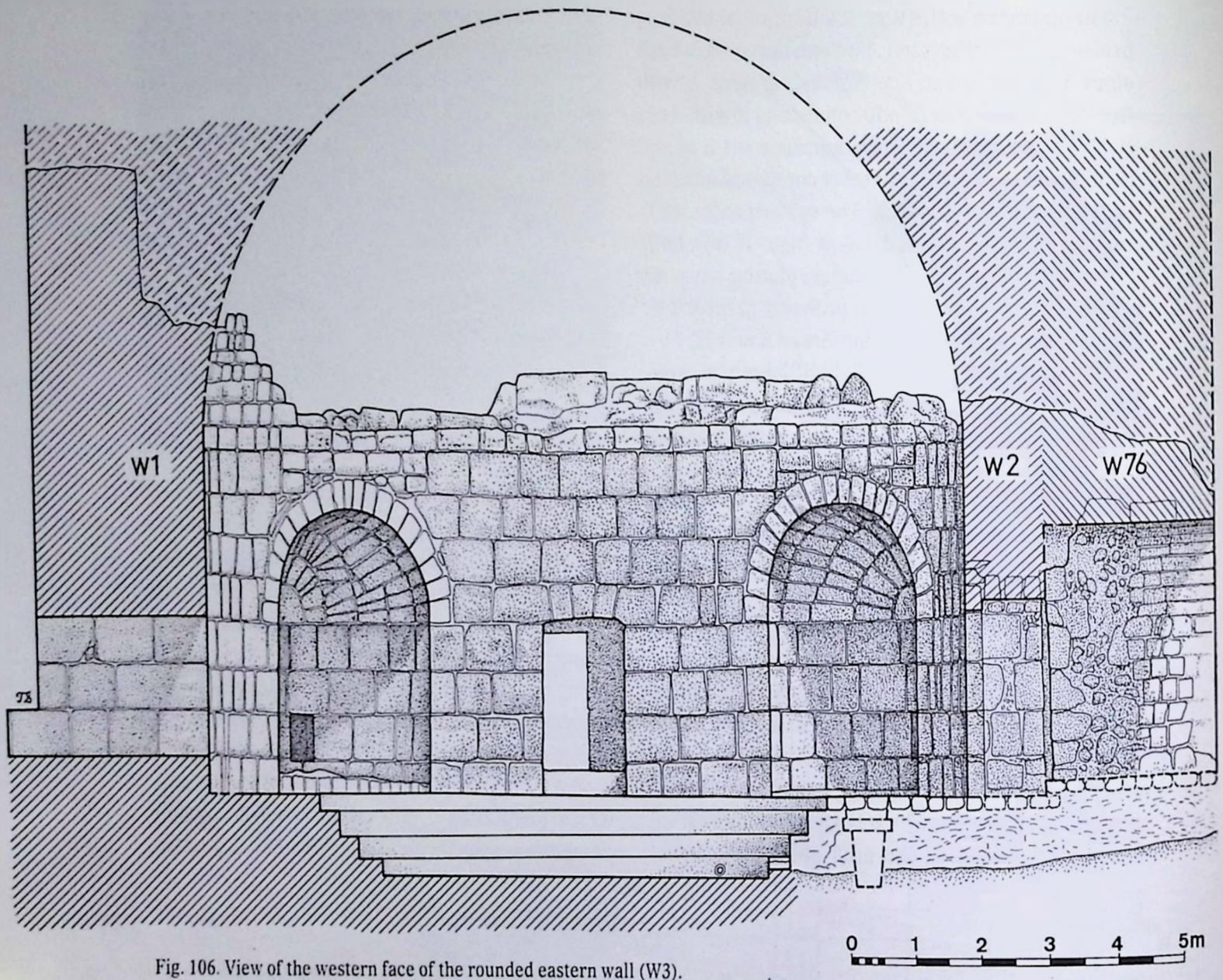


Fig. 106. View of the western face of the rounded eastern wall (W3).

as a doorway. This assumption is based on two facts: firstly, the threshold is ca. 0.5 m above the hall's floor level, and secondly, it borders on the pool in Area E, rendering its use as an entrance into the hall virtually impossible. It should be noted that the building stones are very similar in size and dressing to those forming the northern face of W1, which were apparently also part of late repair activity in the building.

The eastern wall of Area A (W3) is preserved to its full original height, 5.1 m above the floor (Fig. 106), where the spring of the vault begins; parts of the vault have survived here to a maximum height of 5.7 m. The architectural seam between the wall and the ceiling is clearly visible (Fig. 107). W3 is

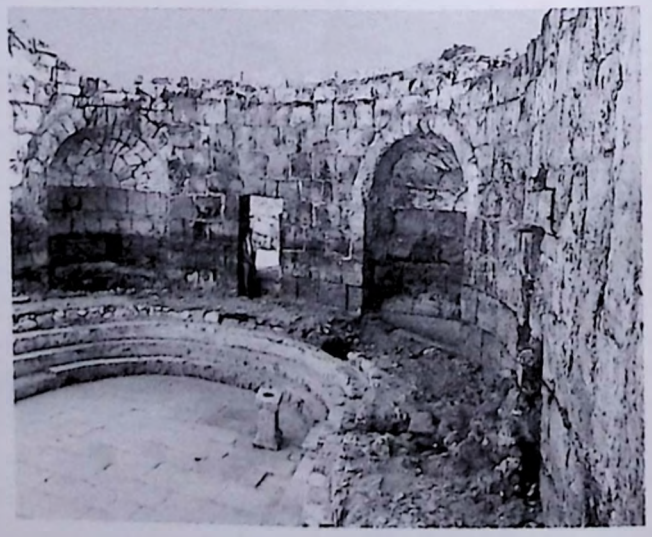


Fig. 107. Rounded eastern wall of Area A (Oval Hall), looking northeast.

built of basalt stones (except for the two semidomes of the alcoves, which were built of limestone), in contrast to the vault, which was built entirely of light-colored limestone. The height of the basalt courses is 0.6 m.

The thickness of W3 varies according to its rounded contour, being 1 m at the center and up to 5 m in the corners. An opening in the center of this wall connects Area A with Area D. The width of the diagonal opening is 1.3 m and its height is 2.3 m. There are two protruding doorposts on the western side of the opening; they are 0.2 m wide and jut out ca. 0.15 m on each side. The top of the opening is at the level of the springs of the semidomes in the upper part of the alcoves located on either side. From this matching of heights and the quality of construction, it is clear that the opening belongs to the hall's original building stage. As we shall see below, the alcove on the eastern side of the opening (in Area D) contains a bathtub, and thus during the first phase of occupation, the opening was not a passage but rather a window.

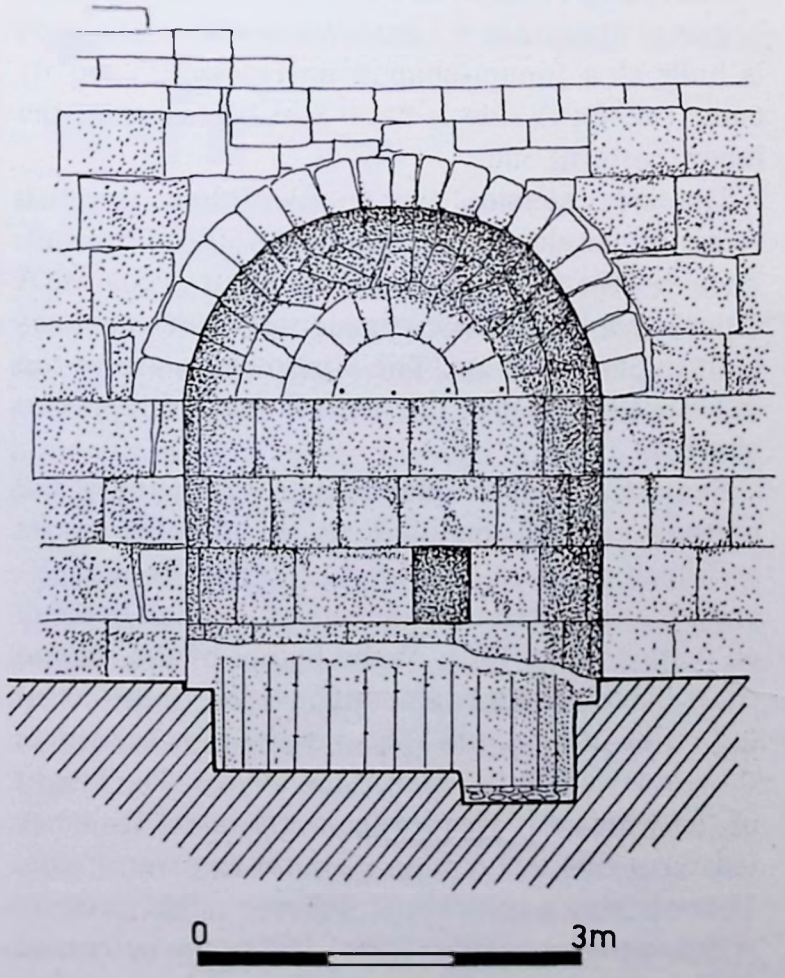


Fig. 108. Sketch of the semicircular alcove (L. 105) in the northeastern corner of Area A (Oval Hall).

In the rounded corners of the eastern wall, on both sides of the "window," two semicircular alcoves are preserved in their entirety. The diameter of the northern one is 3.2 m and it attains a maximum height of 3.9 m above the floor of the hall (Fig. 108). The walls are built of four courses of basalt stones reaching a height of 2.4 m above the floor. This alcove contains a small semicircular bathtub (see below). At the height of the second course above the bathtub was an opening, 0.5 m wide and 0.6 m high, through which water was fed into the tub. The southern alcove of W3 is almost identical.

The two alcoves were roofed with semidomes made of well-dressed limestone. Visible in the bottom course of the semidomes is a row of bronze joints for cladding the walls with marble slabs.

The southern wall (W2) of Area A is preserved to a height of 5.5 m (Fig. 109). Its thickness varies, from 1.6 m in the western part to 4.1 m in the eastern part. The great thickness of the eastern part is due to the fact that here W2 adjoins W76, the wall supporting the vault of the neighboring hall to the south (Area G). The lower western part of the wall has been partially destroyed as the result of natural erosion of the stone by the water of the mineral spring flowing on its other side.

The entrance to adjacent Area G was built in the eastern part of the wall. It is 1.4 m wide and 2.4 m high. Its monolithic lintel is 2.3 m long, and above it is a relieving arch that has been preserved intact. The length of the entrance's stones ranges between 0.6 and 1.1 m and the height of each course is 0.6 m. A repair of limestone was incorporated into the center of the wall. The 5.5-m-long repaired section is built of well-dressed stones varying in size. They are laid unsystematically as headers and stretchers.

The western wall (W4) of Area A is preserved to a maximum height of 7.1 m above the floor (Fig. 110) and attains a thickness of 2.7 m. This wall formed part of the long "Wall of Windows" that faced Area F. The three openings in this wall were not entrances, as was initially assumed, but rather windows – a large central window and two smaller ones in the side alcoves (Fig. 111). Two additional

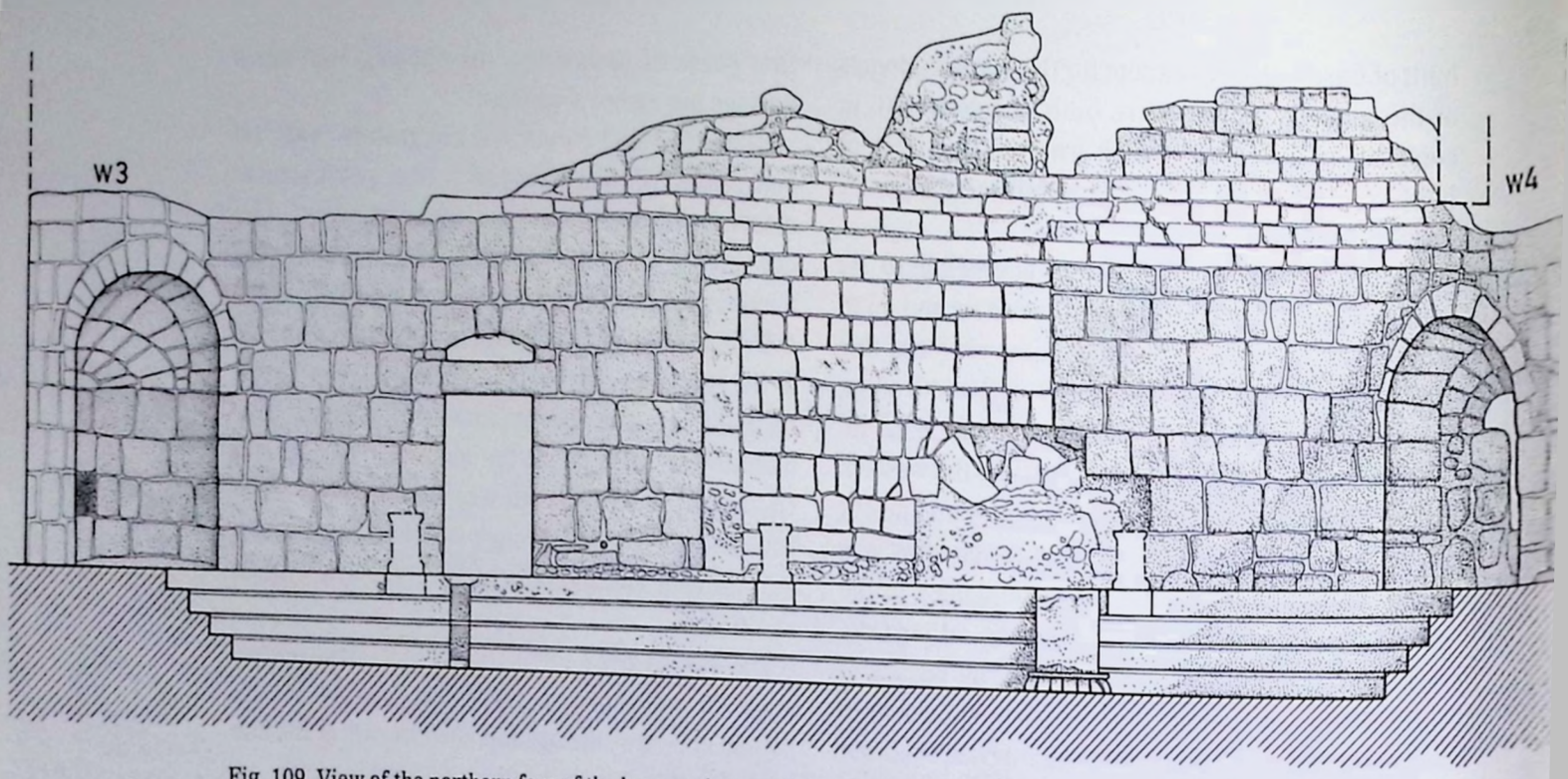


Fig. 109. View of the northern face of the long southern wall (W2) in Area A (Oval Hall).

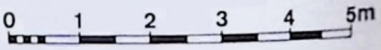




Fig. 110. The western "Wall of Windows" (W4) of Area A (Oval Hall), looking west.

windows were most probably built above the side windows. The large number of windows was designed to ensure maximum lighting and ventilation of the hall's interior. The three windows are funnel-shaped: the width of the central window at the inner face of the wall is 3.5 m, broadening to ca. 4.7 m at its outer (western) face. The maximum height of this window on the inner side of W4 is 4.8 m, increasing to ca. 5.2 m on its outer side. The windowsill is 1 m above the floor of the hall.

The spring of the arch above the central window begins at a height of 4.1 m above the floor. The arch is built as a funnel-shaped barrel vault, and its outer (western) side is ca. 0.5 m higher than the inner (eastern) one.

The side alcoves are smaller than the two semicircular alcoves on the eastern side of the hall. Their height is 3.6 m and their span is 3.2 m. A funnel-shaped window broadening outwards was built in each of them. The windowsills are at the same level as that of the central window, i.e., 1 m above the floor.

Examination of the plan and cross section of the northern alcove enabled us to determine its architectural details (Fig. 112). This is a well-preserved semicircular alcove with a small bathtub on its floor (Fig. 113). At the height of the second course above the tub, a small opening (0.5×0.6 m) fed water into the tub. This course also served as the windowsill in the rear of the alcove. The height of the window increases from 1.9 m on its inner (eastern) side to 2.8 m on its outer (western) side. There is also a substantial difference between its width on the inner side (1.5 m) and on the outer side (2.5 m) (Fig. 114). This made possible the maximum penetration of light and breezes directly into

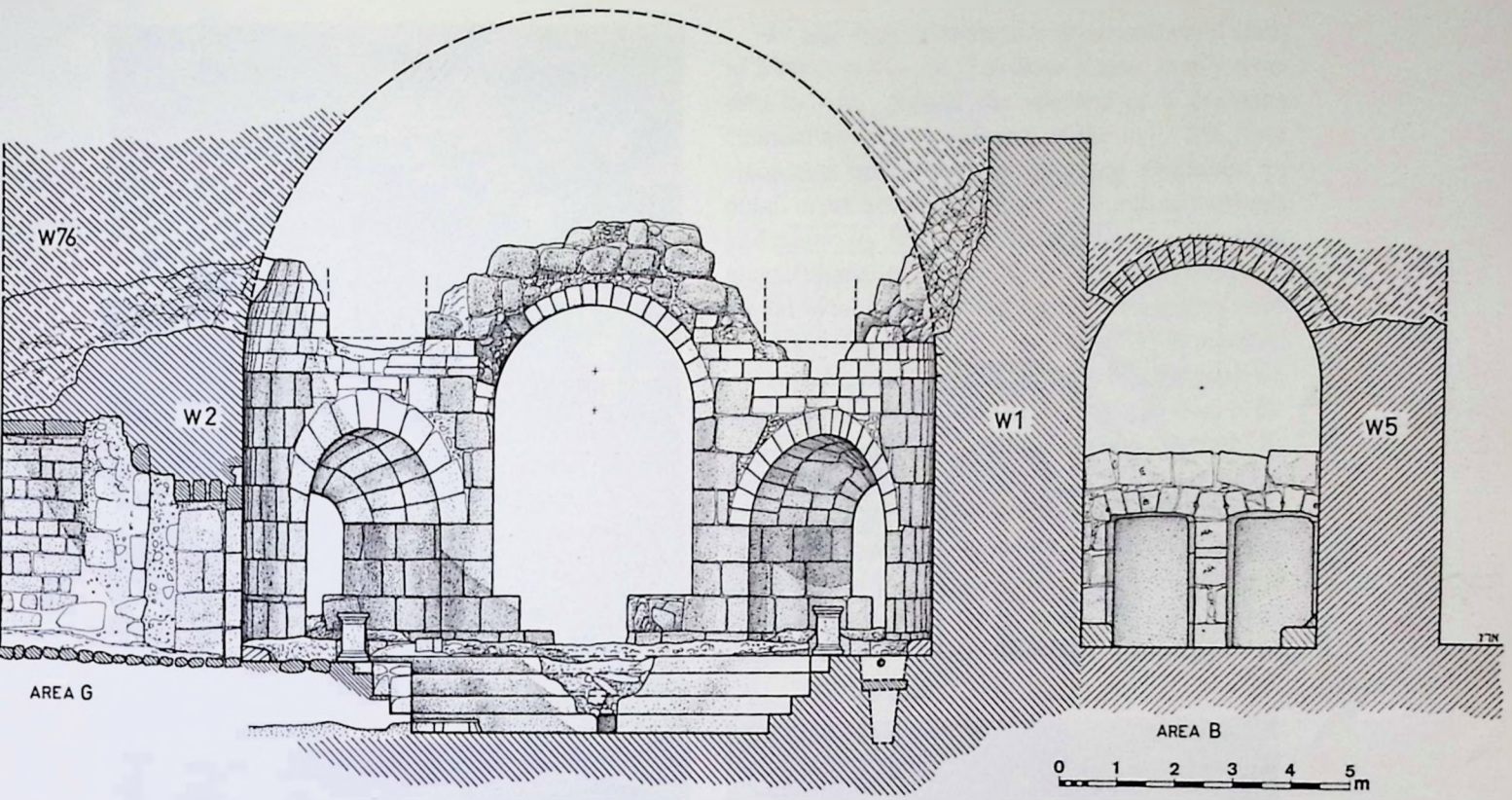


Fig. 111. View of the eastern face of the rounded western wall (W4) in Area A (Oval Hall) and a lateral cross section of Area B (passage rooms).

the interior of the hall. The window in the southern alcove is similar in detail but smaller.

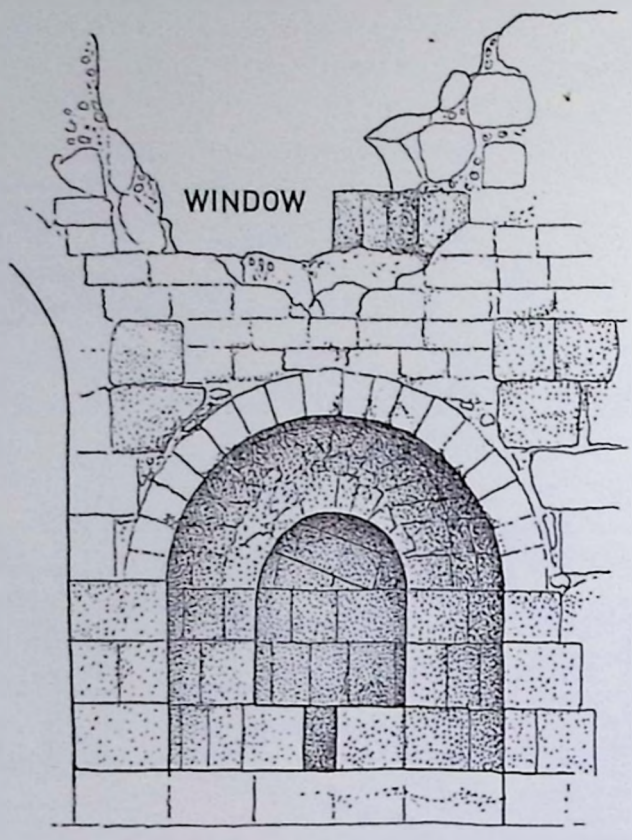
Above each of the side windows was yet another window. Only the foundation of the sill of the southern one has survived; it is 1.6 m wide and is preserved to a height of 1.2 m. These windows were built essentially inside the vaults and were thus probably not very tall.

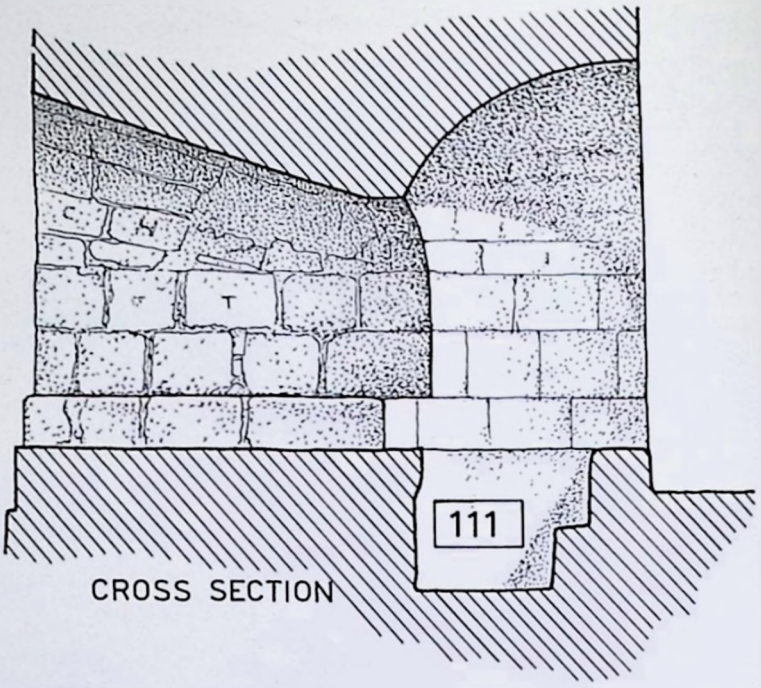
The floor of Area A includes a 1.8-m-wide walkway (L. 101) which skirts the central pool. The walkway (at -173.20) is paved with slabs of local limestone. The slabs are not uniform in either shape or dressing, and thus it seems that they belong to different occupation phases of the baths complex. Along the walkway, next to the walls, a stone bench was built around the hall. It is 0.5 m wide and clad with 2-cm-thick marble slabs. Remnants of the cladding slabs are preserved in the northeastern corner of the hall. The bench was probably intended for the convenience of the bathers, and its presence may indicate that they spent more time in the Oval Hall than in the neighboring halls which lack benches.

In the bedding beneath the floor of the walkway, we found the remains of a lead pipe that conveyed water to the six fountains around the central pool. In the northern walkway, a section of pipe ca. 9 m long was found *in situ*. The pipe has a diameter of 9 cm and is located inside a 0.15-m-wide channel. At a certain point a 90° offshoot from this pipe led water to one of the six fountains.

The central pool (L. 106) of Area A is preserved almost in its entirety. It measures 8.4×20 m and its volume is estimated at ca. 150 m^3. Four steps were built around the pool, serving both for entry and for sitting. The steps, 0.27 m high and ca. 0.3 m wide, are clad with limestone or marble slabs.

A probe along the line between the lowest step and the pool floor (L. 108) revealed that the floor actually abuts the step (Fig. 115). The floor and the steps were thus built at the same time as an integral part of the baths complex. Along the section in





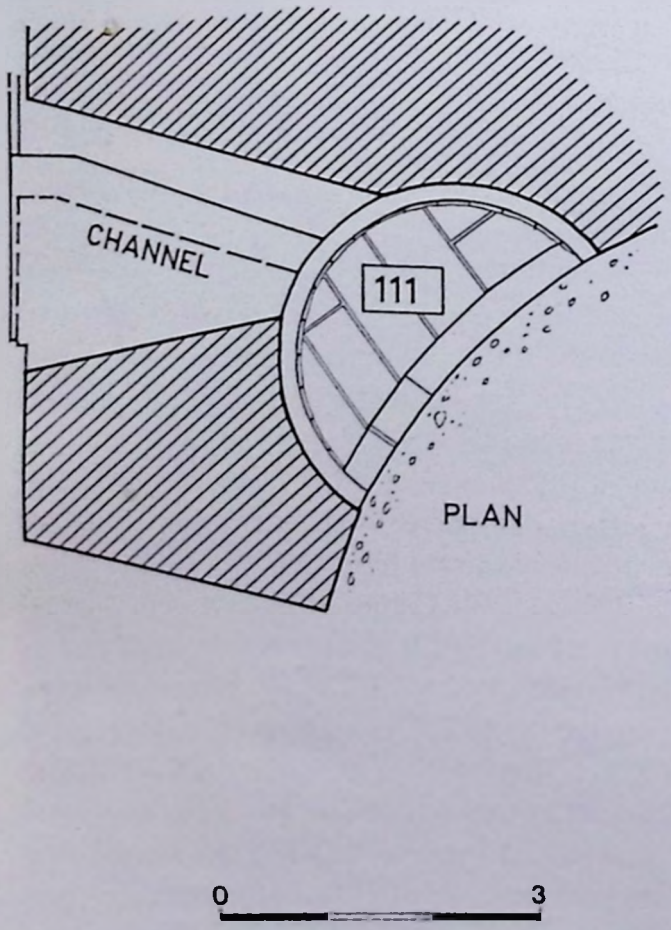


Fig. 112. Plan, cross section, and sketch of the semicircular alcove (L. 111) in the northwestern corner of Area A (Oval Hall).

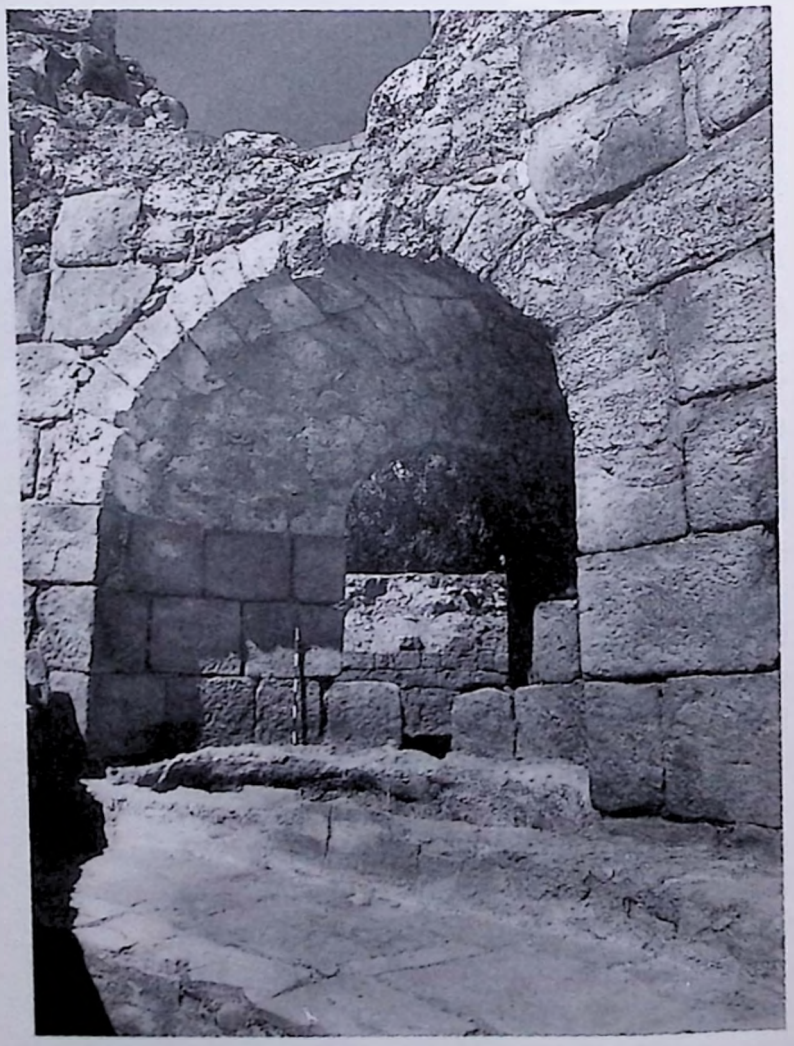


Fig. 113. Northwestern alcove (L. 111) in Area A (Oval Hall), looking west.



Fig. 114. Funnel-shaped window in the northwestern alcove of Area A (Oval Hall), looking east.

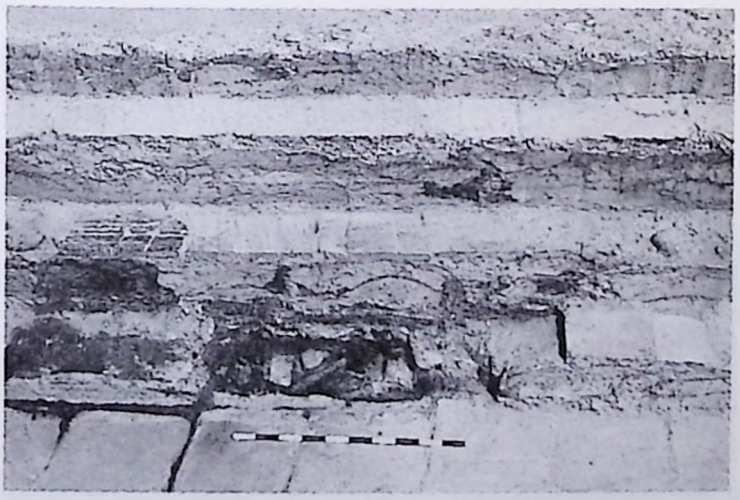


Fig. 115. Probe at the line of contact between the pavement of the central pool and the steps (L. 108), looking north.

which the probe was conducted (1.2 m), we exposed the bedding beneath the steps, which, like that below the pool floor, was composed of dark gray mortar (see below).

The pool floor consists of well-smoothened slabs of bituminous stone. The floor slopes gently from east to west, toward the opening of a drainage channel at the western end of the hall. The floor slabs and underlying bedding are described in detail in the section dealing with building methods and materials. When the pool was being excavated, many fragments of marble cladding were found in the alluvium. These slabs may originally have served as the cladding for the hall's corner alcoves.

Near the southwestern corner of the pool we uncovered a base built on top of the steps (Fig. 116). It is 1.1 m wide, 2 m long, and up to 1.1 m high. At the foot of the base, a square shelf of sorts (1.2×1.2 m) was built 0.2 m above the pool floor. The shelf is made up of two slabs of smoothened limestone. It appears that the base served as a pedestal for a statue. Adjacent to the pedestal (L. 106), three fragments of a Greek inscription (No. 69) were

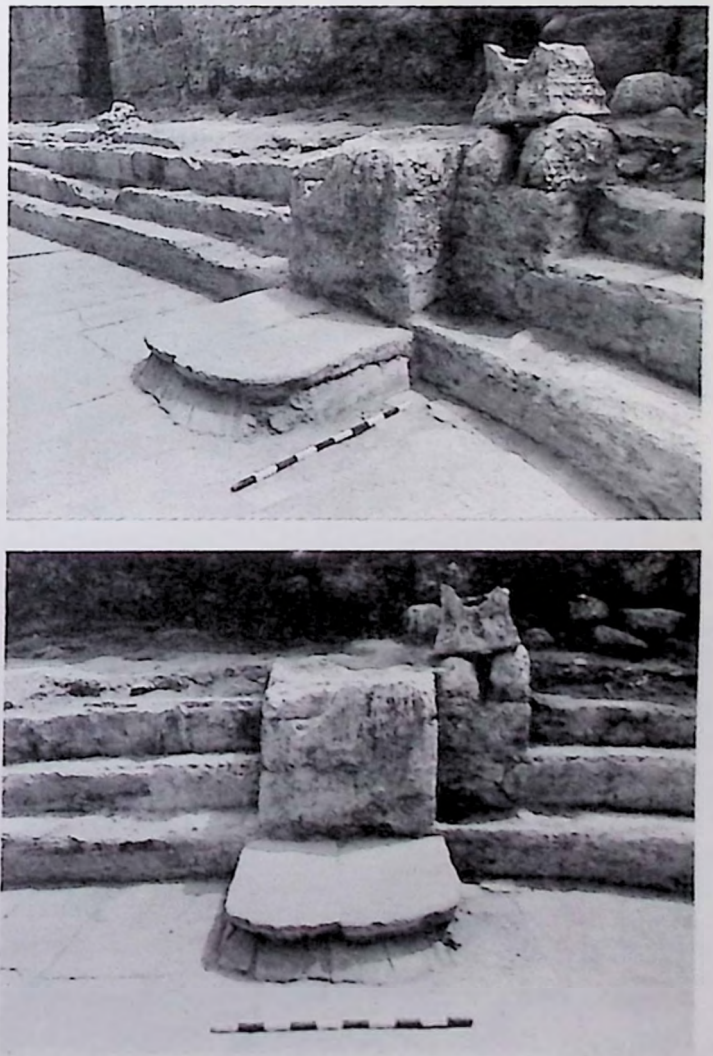


Fig. 116. A base built in the southwestern corner of the central pool in Area A (Oval Hall), looking south.

found. The inscription is in calligraphic script; in all likelihood it was originally located above the statue.

The central pool of Area A was fed by water from the hot spring. The inflow was via a channel extending directly from the oval pool in Area G. The channel, which is completely preserved, runs beneath the threshold of the entrance in W2. It is 0.25 m wide, 0.9 m deep, and roofed with stone beams measuring ca. 0.3×0.7 m in cross section. From the main channel, a circuitous channel of the same dimensions branches eastward to Area E. The overflow from the central pool of Area A was drained via a channel built at its western end, beneath the central windowsill, into the stream that carried the water of the spring to the Yarmuk River.

Around the central pool stood six marble fountains which supplied cold water. Two of them were found intact and the bases of the other four were revealed in the debris. The fountains are fairly large and similar to the one whose remains were found in Area C (Fig. 117). They are ca. 0.8 m high and their bases measure 0.54×0.64 m. In the northwestern corner a fountain was found stuck in the layer of alluvium that filled the pool (Fig. 118). This attests to the fact that the fountains were in use throughout the centuries, until the great earthquake of 749 that severely damaged the building and filled its pools with alluvium.

The fountains were erected on bases built on the rim of the pool. Four complete bases were found – two central ones and two at the points where the pool begins to curve on the west. The bases protrude ca. 0.3 m above the steps, are 0.7 m long and 0.3 m high – being thus of the same height as the first step in the pool. The two bases on the pool's eastern side were missing, but we may assume that their location corresponded to that of their counterparts on the western side, i.e., at the points where the pool begins to curve.

In addition to the central pool, four small semicircular bathtubs were built in the

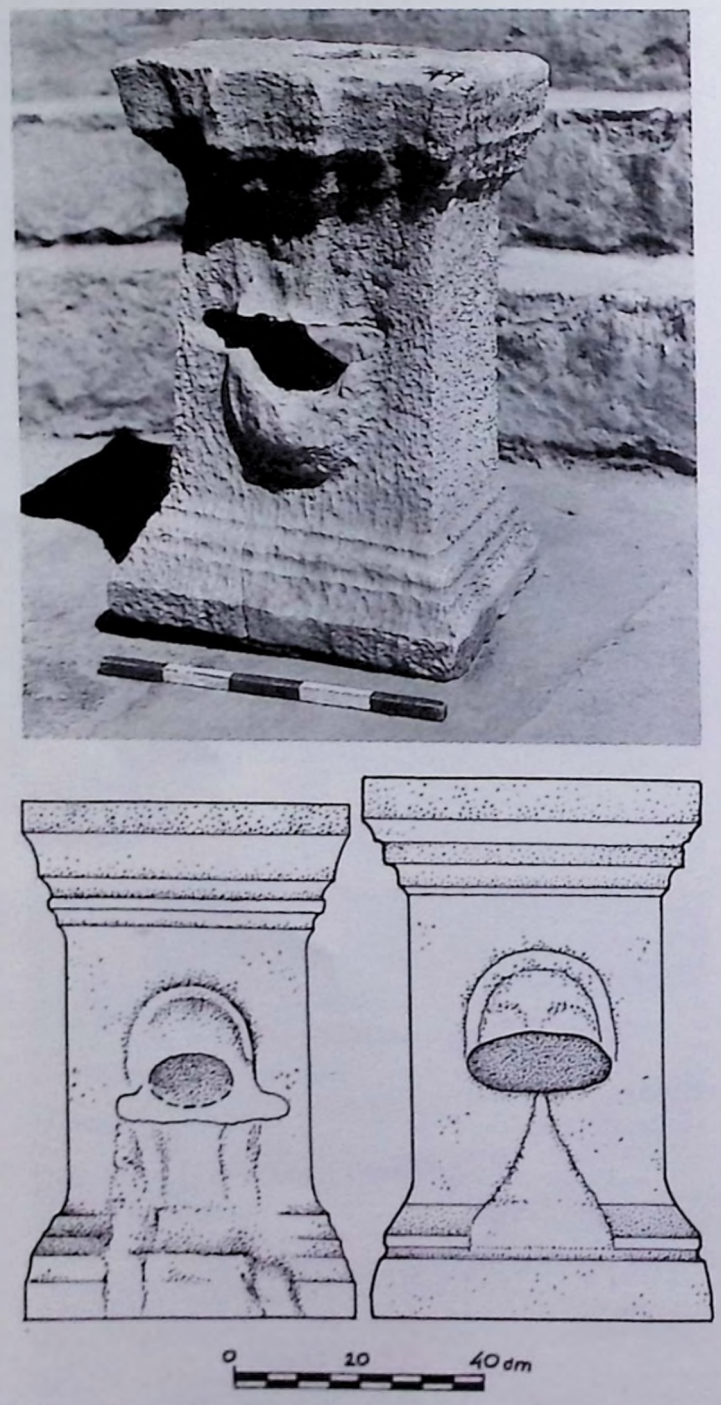


Fig. 117. Intact marble fountain found on the floor of the pool in Area A (Oval Hall).



Fig. 118. Another fountain found in the alluvium above the central pool of Area A (Oval Hall).

semicircular corner alcoves of the hall. The most complete bathtub (Fig. 119) was exposed in the southeastern alcove (L. 103). It is 3 m in diameter and at least 0.6 m deep, and thus its volume was ca. 2 m^3. In order to facilitate entry into the bathtub, a 0.3 m-wide step was built along its straight wall, 0.55 m above the floor. The bathtub floor is made of smoothened slabs of bituminous stone. The walls are built of fired bricks covered with plaster, similar to the surfacing of the side bathtubs in Area C. The rear wall was preserved to a height of 0.74 m above the bathtub floor. In front of the bathtub was a parapet. The artifacts found in this bathtub include glass mosaics that in all probability decorated the hall's superstructures.

The water entered the bathtub via a lead pipe (no longer extant) that was laid inside a channel opening in the alcove's rear wall. This channel opening was most probably designed as a fountain through which water flowed into the bathtub. The water was drained directly into the central pool via an opening at the bottom of the tub. The opening may be associated with a lead pipe (9 cm in diameter), the remains of which were discovered in the circuitous channel. The outlet of the pipe was found at the level of the central pool's floor. These data enable us to reconstruct the cold-water supply system to the bathtub as well as the rapid drainage to the central pool (Fig. 120).

The bathtub in the northeastern alcove (L. 105) is similar in shape and size: it is 3 m in diameter, and a 0.35-m-wide parapet was built in front of it. The floor level was revealed at a depth of 1.25 m below the edge of the parapet. The inner wall of the

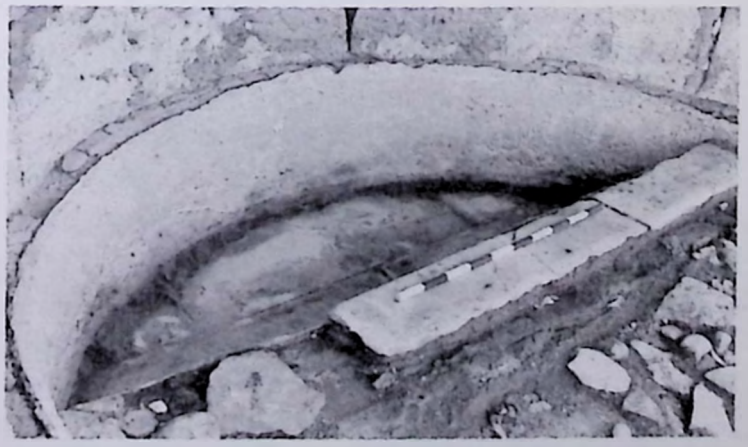


Fig. 119. Bathtub in the southeastern alcove (L. 103) of Area A (Oval Hall), looking southeast.

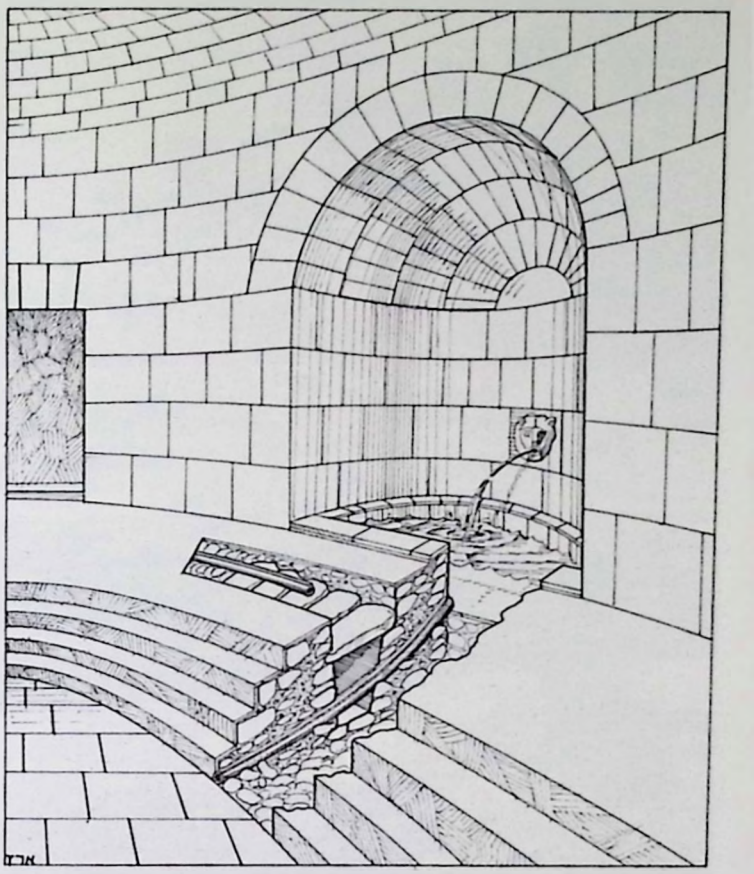


Fig. 120. Reconstruction of cold-water supply system of the bathtub in the southeastern alcove of Area A (Oval Hall).

bathtub, the overall thickness of which is 0.25 m, is built of bricks and clad with slabs. The water reached this bathtub via a lead pipe laid in a channel passing through the wall behind it, and entered it through a fountain built at the inlet above the bathtub. No drainage outlet to the central pool was found here. However, it was possibly blocked at some stage, and thus its location is no longer discernible. It is also possible that the water was drained manually.

Similar bathtubs were built in the semicircular alcoves on the western side of the hall. The northerwestern bathtub (L. 111) is preserved in its entirety; its diameter is 3 m and its depth from the edge of the parapet is 1.3 m. The parapet is 0.5 m wide and is preserved to a height of 0.4 m above the level of the walkway. A step 0.3 m wide and 0.6 m above the tub's floor was built on the interior of the parapet wall.

The water reached the bathtub through a channel built in the windowsill behind it. Here, too, a lead pipe probably supplied the cold water. The bathtub in the southwestern alcove is smaller, having a

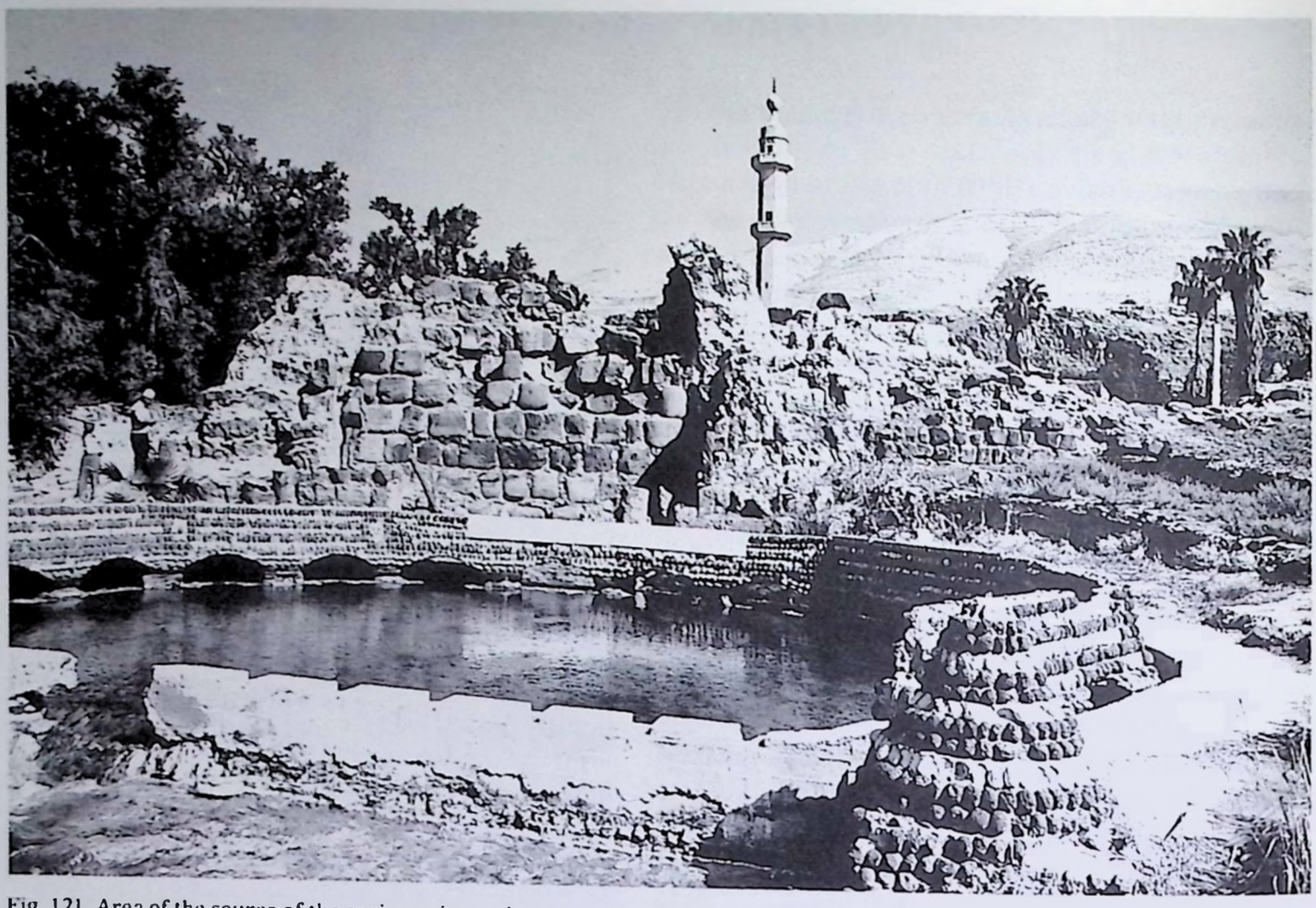


Fig. 121. Area of the source of the spring prior to the excavations, looking north.

diameter of 2.7 m; however, its other details are identical, including the parapet in front of the tub and the step built at its side. Here, too, the water was led to the bathtub via a channel built in the windowsill behind it.

Area A was roofed by a vault composed of three parts: a regular barrel vault in the center, and a semidome on either side that conforms to the oval shape of the hall. Long sections of the vault are preserved *in situ*. Its spring is 5.2 m above the floor. The good preservation of the vault permits reconstruction of its original shape and the estimation of its maximum height, ca. 10.6 m above the floor of the hall and 11.8 m above the pool floor.

The vault was built of tufa voussoirs. In the course of the excavation, debris containing vault stones was found here. Some of the stones fell onto the alluvium that covered the hall following the earthquake of 749 and others fell directly onto the hall's floor. This indicates that the destruction occurred in stages. The stones of the ceiling measure 0.55 m in length, 0.3 m in height, and only 0.25 m in width.

Area G: The Hot Spring Hall

The spring is the heart of the baths complex and the source of its importance. The pool next to it was therefore the culminating point of a visit to the baths. Use of the spring essentially did not cease and over the generations various buildings covering the remains of earlier periods were erected around it. During the British Mandate, an ornamental pond was built around the spring (Fig. 121). At the southern end of this pond a cement dam was built to raise the water level and lead the water, via the channel south of the spring, to the Yarmuk River. North of the spring lie the remains of the baths complex and east of it were terraces which offered easy access to the spring itself. These terraces, as well as the pond and the dam, were dismantled in the course of our excavations.

At the end of excavations, three architectural units were discovered in Area G, each containing a pool: the area around the source of the spring, a large hall to its east, and another, smaller room to the south of the hall (Fig. 122). These three units together comprise Area G.

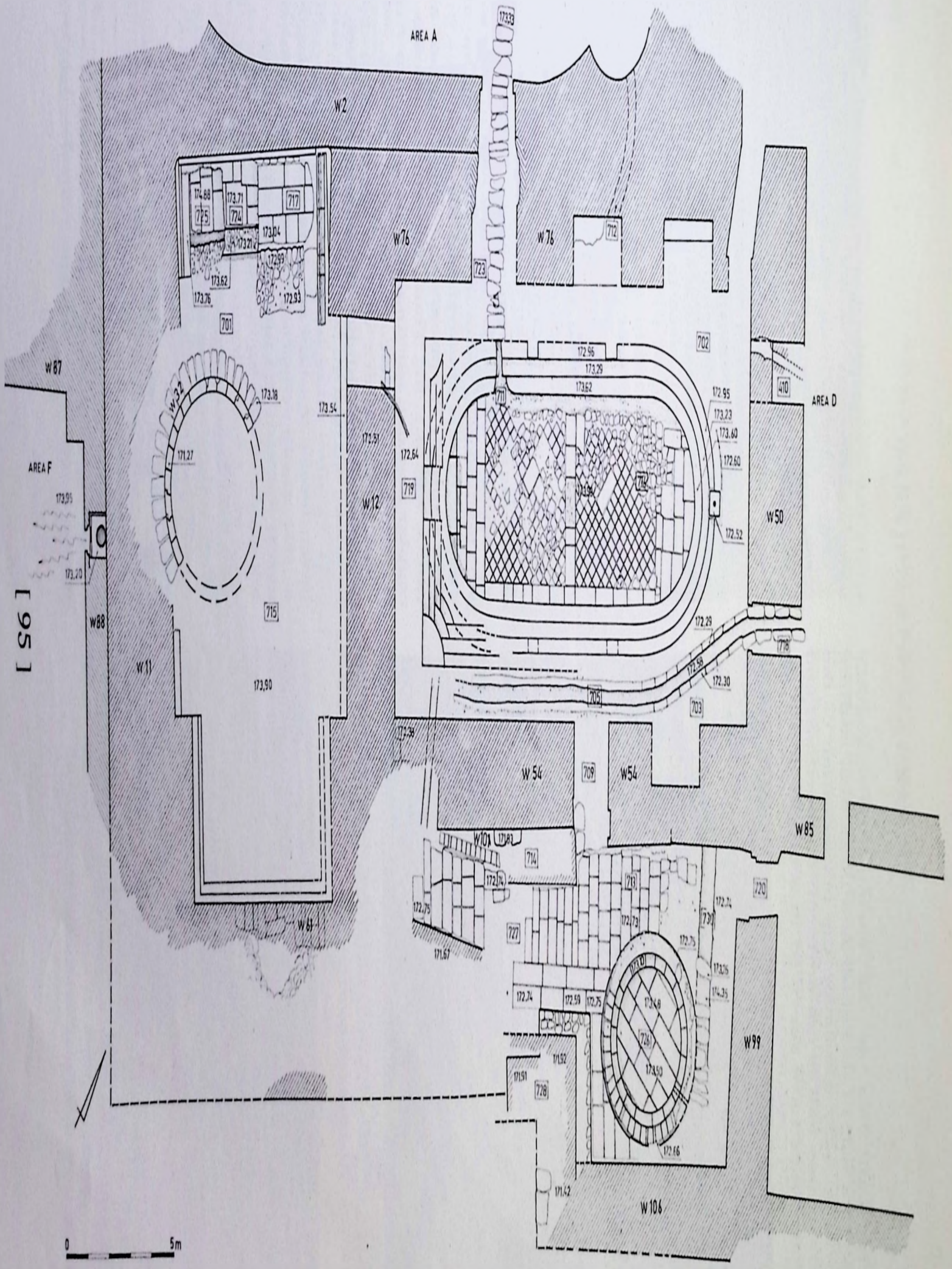


Fig. 122. Detailed plan of Area G (Hot Spring Hall).

The hall east of the spring is rectangular (9.1×16.8 m). In its center is a large oval bathing pool (Fig. 123). However, the preservation of the walls of this hall is not uniform: the northern and eastern ones have survived to a height of 5-6 m, while the western and southern walls have been largely destroyed.



Fig. 123. General view of the pool east of the spring, looking west.

The northern wall (W76, adjoining W2) is preserved to a height of 5.5 m above the floor (Fig. 124). The line of contact between the two walls is visible as a vertical seam in the passageway connecting Areas A and G.

Two entrances and three alcoves were exposed along W76. The western entrance connects the hall with Area A. Measuring 1.8 m in width, it was located within an alcove 2.1 m wide. At the top of the alcove a vault rises to a height of 3.1 m above the floor. This alcove is 1.4 m deep. The eastern entrance leading into Area D is preserved in its entirety. It is narrower (1.1 m wide) and 2.1 m high.

Little has survived of the alcoves between the two entrances; we know of their existence from the plaster remaining on their rear walls. They are identical to one another, each measuring 2.3 m in width and 1.4 m in depth. In the rear wall of the western alcove, a channel leading in the direction of the southeastern semicircular alcove of Area A was breached (L. 712). We may assume that a lead pipe leading cold water to the bathtub in that alcove was laid in this channel. All three alcoves in W76 were vaulted. It appears that the height of all the vaults was 3.1 m. Thus, the three alcoves (two regular and one serving as a passage into Area A) created a symmetrical layout.

The hall's eastern wall (W50) is preserved to a height of 4.3 m above the floor (Fig. 125). This

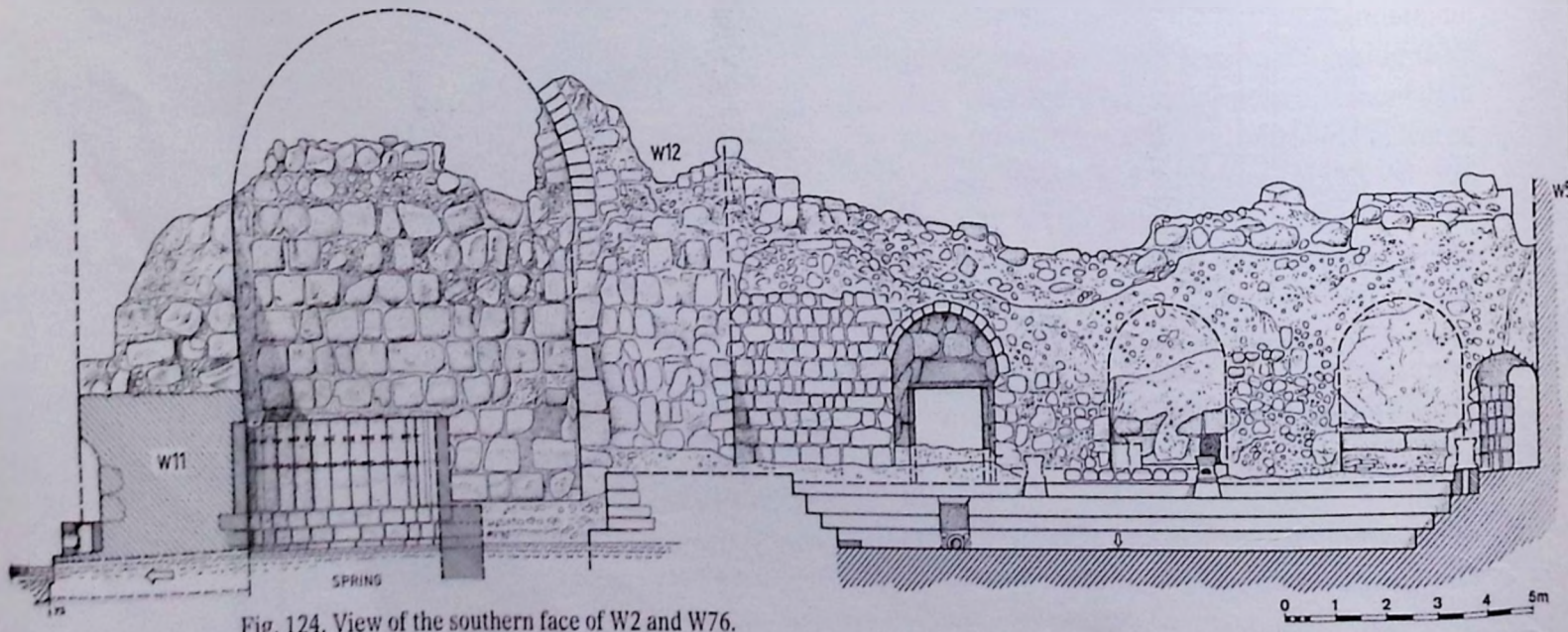
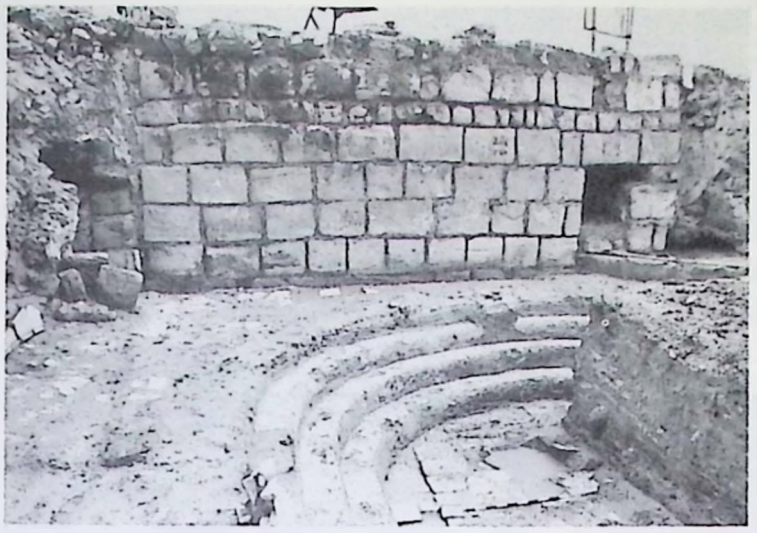


Fig. 124. View of the southern face of W2 and W76.



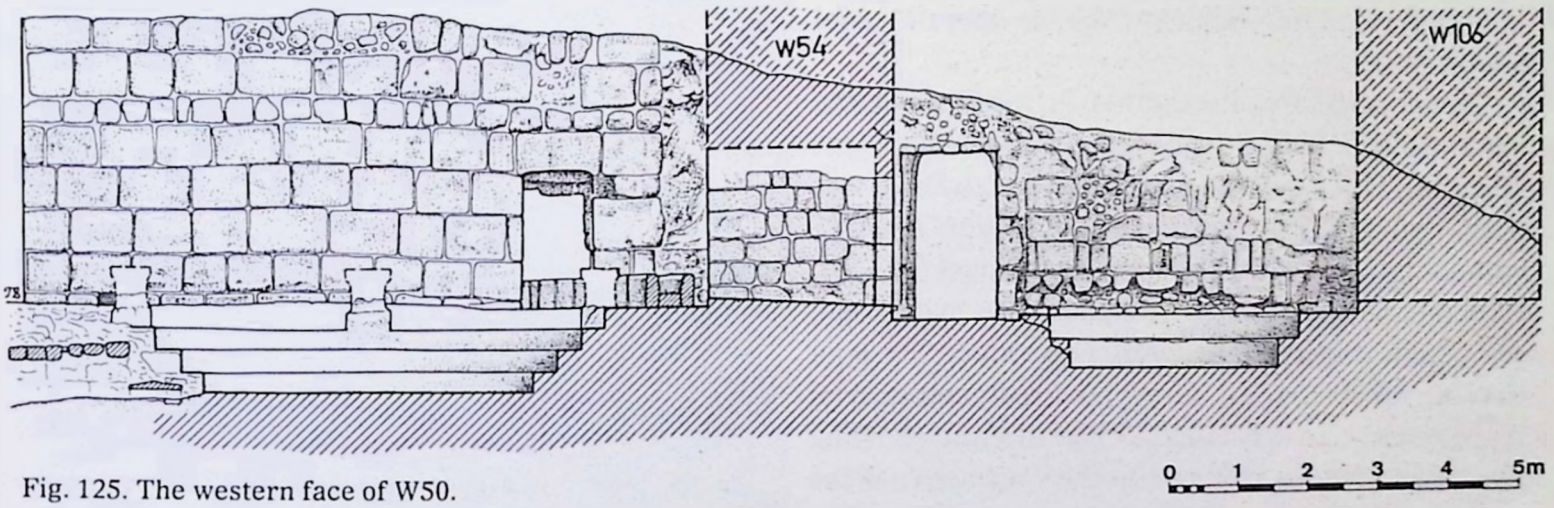


Fig. 125. The western face of W50.

massive wall, 2.5 m thick, was built of basalt courses, each 0.6 m high, except for two in the upper part, which are only 0.4 m high. Near its southern end, an entrance leading into the southern wing of Area D was preserved in its entirety. This entrance is 1 m wide and 2 m high. At a later phase of the baths complex (apparently Phase III), a water channel from the spring ran through it into Area J (see below). In the second course above the lintel, which consists of a single stone 1.2 m long, one can discern a shallow depression (0.6×0.6 m) that once possibly contained an inscription of the type affixed in the building and remains of which were found in the excavation.

The southern wall (W54) of the hall has been largely destroyed (mainly on the west). It is preserved to a height of 2 m on the eastern side but only 0.3 m on the western side. This is a massive wall (2.6 m thick), in the center of which was a 1.6-m-wide entrance leading into the southern room of Area G. An alcove 2.3 m wide and 1.3 m deep is located to the east of the entrance. Due to the poor preservation of W54, we can provide no further details regarding the alcove.

Almost nothing remains of the western wall (W12), separating the hall from the spring (Fig. 126). Since only part of this wall has been preserved, and then only to a height of 0.2 m, it is difficult to reconstruct its upper parts. We prefer to regard it as a parapet offering a view of the spring. As we shall see below, W12 did not serve as a support for the vault above the spring and therefore we should not assume that it was built up to the ceiling. Its western face was part of the pool around the spring. (We have termed this pool the elevating pool because its function was to raise the level of



Fig. 126. Remains of the partition wall between the spring and the pool east of it (L. 719), looking south. Note the section of lead pipe preserved *in situ*.

the spring water.) Visible at the northern end of the wall is the doorpost of a passage connecting the hall and the elevating pool. This passage is 1.4 m wide and offers access to the small bathtub north of the round elevating pool of Phase II (see below).

As in the other bathing halls, the floor around the oval pool was reduced to a walkway ranging in width from 1.1 m in the sections on the north and south to 1.6 m in the sections on the east and west. We may postulate that this walkway was also paved with marble slabs; however, only isolated sections have been preserved along the northern edge of the floor. On the eastern side of the hall (L. 702), we found part of a panel of 2-cm-thick marble slabs that separated the walkway from the later oval pool (see below).

Two stages are discernible in the pool at the center of the hall: a late stage, when the pool was given its oval shape, and an earlier one, when it was rectangular. This became evident from a probe conducted in the western part of the pool (L. 719). When the benches of the oval pool were dismantled, it became clear that beneath it was an earlier pool having a rectangular shape. The rectangular pool (estimated size: 6.8×14.2 m) had three steps along its perimeter (in contrast to the four steps of the oval pool). The height of each step is 0.3 m. The depth of the pool is ca. 1.2 m. The overall volume is estimated at ca. 100 m^3.

Part of the floor of the rectangular pool was revealed in a probe (L. 716) beneath the floor of the oval pool. Several slabs of bituminous stone measuring ca. 0.3×0.5 m were exposed. The level of the early floor (-174.05) is ca. 0.15 m lower than that of the late floor of the oval pool.

The water from the spring probably flowed directly into the rectangular pool (and in all likelihood also into the oval pool). Evidence of this may be found in the 1.1-m-wide gap in the steps at the center of the pool's western side.

Drainage of the pool in both stages was via the channel connecting it with the pool in Area A, north of it. This channel (L. 711), which is preserved intact, runs beneath the entrance linking Areas G and A (Fig. 127). The ceramic finds in the channel date from the end of the Umayyad period and thus it was in use during all the occupation phases of the baths complex.



Fig. 127. Stone pipe at opening of the channel connecting the pools of Areas G and A, looking north.

The lower part of the channel opening housed a 0.7-m-long basalt pipe which was incorporated in the stepped wall of the pool. The pipe's inner diameter is 0.2 m, and the thickness of its walls reaches 0.06 m; thus its outer diameter is 0.32 m. The plugging of this pipe prevented the flow of water into the neighboring halls. This mechanism allowed the operators to empty the nearby pools (of Areas A and E), when necessary, without changing the water level in the pool next to the spring (assuming that the level of the spring water could be controlled by the plug on its western side).

Beneath the western part of the southern walkway we found remains of another channel extending in a north-south direction. The channel, 0.35 m wide and roofed with basalt beams measuring 0.2×0.4×0.77 m, runs beneath the foundations of the southern wall (W54). Its top is ca. 0.35 m below the walkway, while its bottom is approximately at the level of the rectangular pool's

floor (-174.05). Further north, in the southwestern corner of the rectangular pool, this channel was found to be blocked by the later oval pool, indicating that it drained the rectangular pool.

The water of the pool was cooled by marble fountains, as was common practice in the baths complex. Three fountains were found in the alluvium that filled the late oval pool (Fig. 128). We



Fig. 128. Marble fountain found in the layers of alluvium in the oval pool, looking southeast.

may assume that the water in the rectangular pool was cooled by similar fountains (the builders of the oval pool most probably made use of the original fountains from the rectangular stage). These fountains are fairly short (Fig. 129), their height

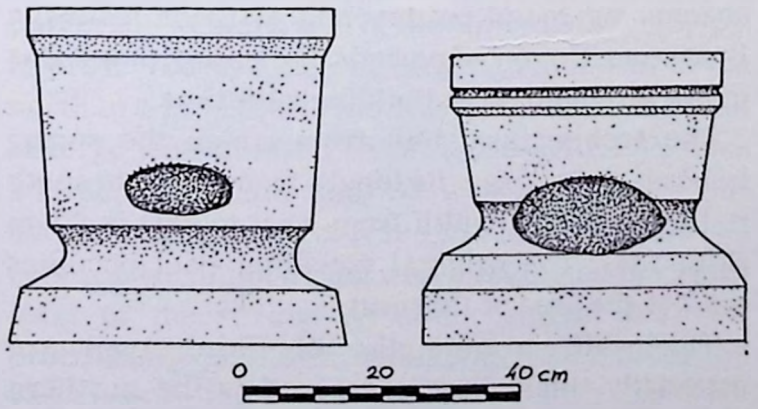


Fig. 129. Views of two marble fountains found in Area G (Hot Spring Hall).

ranging from 0.35 m to 0.5 m, and they measure 0.5×0.5 m in cross section. It appears, then, that the shape of the fountains varied from hall to hall.

The marble fountains were fed, as was customary, by lead pipes. A single section of lead pipe, 9 cm in diameter and 1.6 m long, was discovered on the walkway west of the pool (L. 719). The pipe is attached to the remaining part of the wall (W12) that separates the hall from the round elevating pool.

The ceiling of the hall east of the spring was apparently vaulted, as may be concluded from the voussoirs revealed in the debris, on top of a ca. 0.35-m-thick layer of alluvium above the walkway, apparently dating from the destruction stage of 749. The tufa voussoirs were found with their narrow side facing down. They are 0.35 m wide, 0.2 m thick, and held together with whitish mortar. A 0.4-0.5-m- thick mass of rubble and mortar was poured on top of them, giving the vault an overall thickness of ca. 0.8 m.

A square room (6.8×6.8 m) containing a round, well-preserved pool was exposed to the south of the hall (Fig. 130). The pool is not located in the center of the room, but adjacent to its southern wall (W106), which is also the southern wall of the entire complex.

The walls of this room are only partially preserved. The northern wall (W54) is preserved to a maximum height of 2.5 m. In this wall we discerned two different parts: the western part built of large basalt ashlars and the eastern one built of rubble and mortar coated with thick layers of plaster. A distinct architectural seam, located 3.3 m from the room's northeastern corner, separates the two parts. The presence of a seam is evidence of the undatable changes that took place in the wall. The wall (W99) to the east of the round pool is preserved to a height of 3.2 m (Fig. 131); it is 2 m thick and built of well-dressed limestone, in contrast to the other walls that are made of basalt. The stones measure 0.4×0.55 m and are laid as headers and stretchers. Thick layers of whitish plaster coat the face of the wall.

Between the northern end of W99 and W54, a passageway leading into the hall to the east was preserved in its entirety. The width of the opening is 1.3 m and its height is 2.3 m. A flat arch composed



Fig. 130. Round pool (L. 726) and access corridor to the spring, looking west.

of five basalt voussoirs is preserved at the top of the opening. The hall on the east (width: 7.1 m, length: unknown) has been only partially excavated.

Very little remains of the room's southern wall (W106). It is 2 m thick and preserved to floor level. The western wall is missing and only its foundations are visible; a bench 0.5-0.7 m wide was built in front of it.

To the northwest of the round pool (L. 714) was a corridor leading to the spring. It is 4.4 m wide and ca. 8 m long, and directly connects the room with the elevating pool. At a later stage, the width of the corridor was reduced: W101, measuring 1.1 m in thickness, was built alongside the northern wall (W54). This addition is preserved to a height of 0.8 m.

The floor of the square room and the corridor connecting it with the elevating pool was built of well-smoothened slabs of bituminous stone. The width of the slabs is ca. 0.5 m and their length



Fig. 131. Round pool (L. 726) and the wall east of it (W99), looking east.

ranges from 0.4 m to more than 0.9 m. The floor level (-172.73) is ca. 0.1 m lower than that in the adjacent rectangular hall.

The round pool (L. 726) is well preserved. Its interior diameter is 3.7 m and it is 0.75 m deep; its volume is thus ca. 8 m^3. The wall of the pool, which is built of bricks, rises ca. 0.2 m above the floor level around the pool. It is 0.35 m wide; 0.45 m below its top is a step 0.25 m wide and 0.43 m high.

The pool floor is made of slabs of bituminous stone, similar to the paving in the other pools of the complex. It slopes downward from west to east, in the direction of the outlet, a pipe 0.12 m in diameter that emptied the water into the drainage channel (0.6 m wide and 1 m deep) exposed east of the round pool (L. 730).

This channel was exposed for a length of 4.5 m (Fig. 132) and runs in a general north-south direction. It is roofed with basalt beams, several of which were found *in situ*. At the bottom of the channel we found pottery and artifacts from the Byzantine-Umayyad periods, indicating that it was in use throughout the building's lifetime.

The architectural unit from which the spring issues is quite large: its length from north to south is 15.6 m and its width from west to east is 8.2 m (Fig. 133). The original elevating pool occupies most of the area of this unit.

The walls around the elevating pool are especially thick. Best preserved is the northern wall (W76) rising to a height of 7.8 m. It is 5 m thick and was found to contain a large alcove measuring



Fig. 132. Channel east of the round pool (L. 730), looking south.



Fig. 133. Roman elevating pool, looking north. In the background: the late elevating pool, and behind it – W2.

3.3×7.2 m. The thickness of the wall behind the alcove is reduced to only 1.7 m. In photographs from the beginning of the century one can discern a huge vault built above the alcove. The span of the vault is 7.2 m and its width is 3.5 m. This vault, together with those built around the elevating pool, helped support the main dome above the spring (see below). The western wall (W11), which forms part of the western wall of the entire baths complex, is preserved to a height ranging from 4 m in the north to 1 m in the south. It is 3.2 m thick and built of large well-dressed basalt stones. A 1.1-m-thick addition was built onto its western side. In this addition, which is preserved to a height of only two courses, we found a plug which regulated the water level of the spring. At either end of W11 are protrusions ca. 0.8 m wide, which supported the vaults above the elevating pool.

Almost nothing has survived of the southern wall (W61) of the elevating pool. To its north is an alcove which formed the southern part of the elevating pool. The eastern wall (W12) of this area has already been described in the subsection dealing with the area east of the elevating pool.

The elevating pool is divided into two parts – a square central part, 8.2×8.2 m, and two narrower wings on the north and south. The bottom of the pool, from which the water emerges, was found covered with alluvium and stone debris, large amounts of which were removed mechanically during the excavation. The present water level is -173.90; however, it appears that the original level was higher (being determined artificially by the plug of the outlet opening of the elevating pool).

The walls of the elevating pool were built of well-dressed basalt ashlars, each course attaining a height of 0.25 m. The courses are cemented with hard, dark gray bonding material. The foundations were reinforced by two steps, one protruding 0.3 m from the face of the wall, and the other, in the southern part of the pool, projecting ca. 0.2 m from the riser of the step above it. At the time of construction of the pool, the builders used wooden boards. Six such boards were found *in situ*, below the present water level. The method of casting in wooden frames was employed in various aquatic building projects, such as the construction of bridges, ports, etc.

A rectangular bathtub (L. 725) was built north of the elevating pool, inside the alcove of W76. Its shape conforms to that of the alcove. The tub features a number of stages. A fairly small part (2.4

m^2) of the earliest stage was exposed at its western end (Fig. 134). The earliest floor, at -173.25, is made of slabs of bituminous stone 0.5 m wide and up to 0.9 m long.

The tub's western wall is identical to the walls of the elevating pool, i.e., it is built of well-dressed basalt blocks bonded with hard, dark gray mortar.



Fig. 134. Remains of the bathtub integrated into the alcove of W76, north of the elevating pool, looking west.

The height of the courses averages 0.25 m. A step protrudes ca. 0.3 m from the bottom of the wall and rises 0.13 m above the floor of the tub. Only a small section of the tub's southern wall (W55) has survived. If these are indeed the remains of the original parapet, then the width of the tub was 1.6 m and its estimated length was ca. 6 m. As we shall see below, this tub was repeatedly renovated in the late stages of the baths' existence.

Nothing has survived of the conjectured dome above the elevating pool. The assumption that there was such a dome is based on the remains of the vault on the northern side of Area G and on parallels in various bathhouses in the region (Gerasa, Bostra). This vault rests on two corner pilasters which were built parallel to another pair of pilasters in the southern part of the elevating pool. We may assume that these four pilasters supported the dome above the elevating pool.

There were probably windows in the upper parts of the walls on the south and west. Such windows were intended to ventilate and illuminate the area of the spring. Moreover, we may assume that at the top of the dome there was an "eye" (*oculus*) – a standard feature in dome construction in the Roman world, the most famous example being that in the Pantheon in Rome from the second century C.E. Such an upper window could have helped light the interior of the hall and also have served as an opening to release the steam which frequently rose from the hot spring below.

Area D: The Hall of Fountains

Area D is the largest of the bathing halls in the Hammat Gader complex and one of the largest architectural spaces ever to be found in the country. The hall has a wide central area and narrow wings on the north and south (Fig. 135). The length of the hall from north to south, including the side wings, is 53.3 m, and the width of the central area is 13.4 m; both wings are 7.2 m wide. The overall area of the hall is no less than 635 m^2!

Area D is centrally located in the baths complex and therefore has a large number of entrances connecting it with the other parts (including those on the east, which were not excavated). In the center (Fig. 136) of Area D there is a large swimming pool surrounded by 28 marble fountains – 14 on each side. These fountains were part of the cold-water system of the baths complex, and thus the water in the swimming pool was relatively cool and intended most probably for relaxation after the remedial bathing in the mineral waters of the hot spring.

Area D is located to the east of all the halls described above, but it was not the easternmost hall of the complex. Its northern end borders on Area H (the entrance corridor), to the west stretch Areas E (Hall of Inscriptions) and A (Oval Hall), and to the

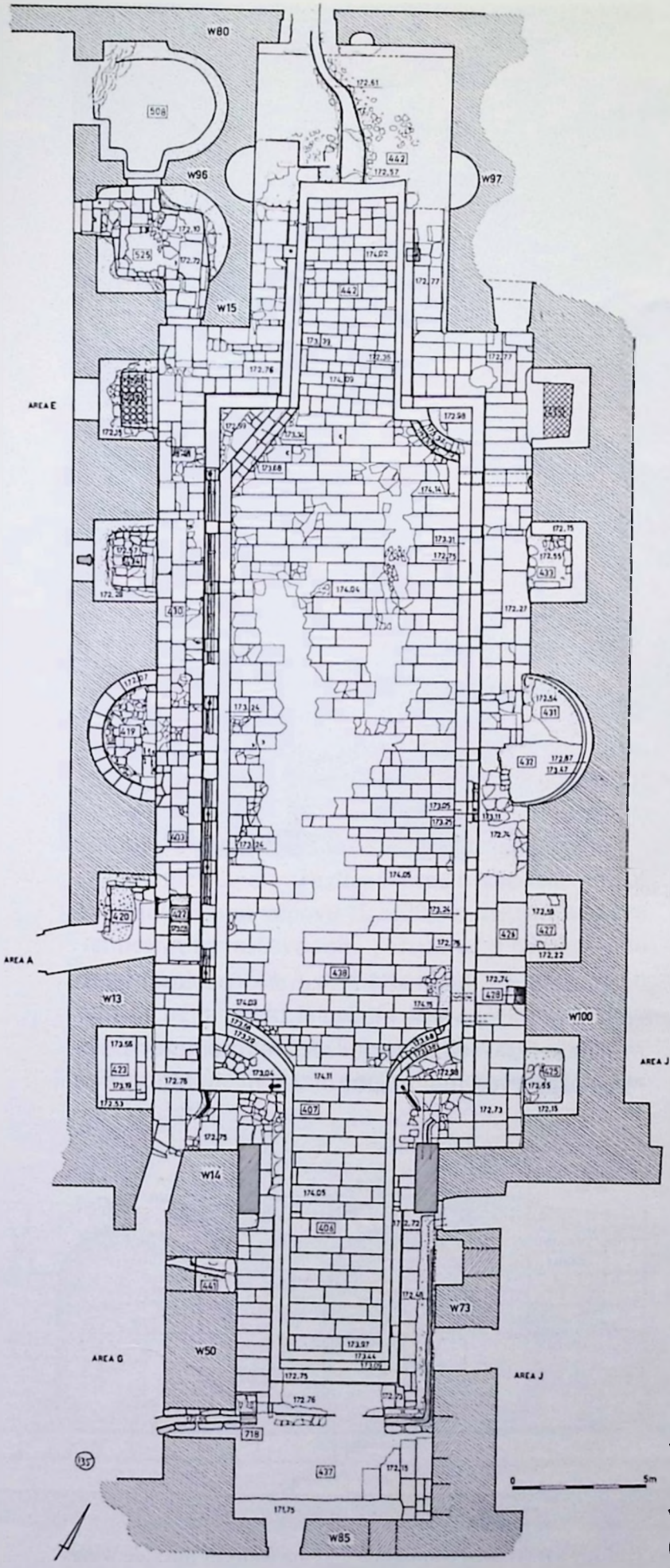


Fig. 135. Detailed plan of Area D (Hall of Fountains).

south is Area G (Hot Spring Hall). To the east are additional rooms and halls that have not yet been excavated.

The western and eastern walls of Area D contain many alcoves (at first we termed this hall "The Hall of Alcoves," and only after the discovery of the many marble fountains was its name changed to "The Hall of Fountains"). Ten large alcoves are arranged symmetrically along the hall's central area – two semicircular ones (diameter 4.8 m) in the middle on either side and eight rectangular ones (measuring 2×3 m) in pairs flanking them. Additional alcoves are located in the hall's two side wings.

The walls, which are built of finely hewn limestone, are well preserved, rising to the height of most of the alcoves. The western long wall (W13) in the central area is preserved to a maximum height of 5.3 m (Fig. 137). This massive 3.1-m-thick wall, built of large limestone ashlars, not only supported the ceiling vault but also accommodated the alcoves on the western side. It was covered with a thick layer (2-3 cm) of white plaster.

There is a double window in each of the northern rectangular alcoves (L. 434 and L. 439) on the western side. The window in L. 434 is better preserved (Fig. 138). The 1.5-m-wide windowsill is 2.5 m above the floor, and a single column separates the two parts of the window. The double window in the northernmost alcove (L. 439) is similar.

The two southern alcoves of W13, each measuring 2×3 m, and the 4.2-m-high vaults above them are preserved in their entirety. Their walls, like all the other walls of Area D, are built of finely hewn limestone ashlars coated with a thick layer of plaster (2-3 cm).

In the rear wall of the southernmost alcove (L. 423), 2.3 m above the floor, was a small rectangular depression measuring 0.2×0.55 m and 7-10 cm deep. A depression of the same size was found in the rear wall of the opposite alcove (L. 425). These two alcoves probably served to anchor a wooden beam suspended between them across the width of the hall.

In the rear wall of L. 420, two similar depressions were carved one above the other. The lower one (0.18×0.3 m) is 2.2 m above the walkway. The dimensions of the depression above it are 0.2×0.2



Fig. 136. General view of Area D (Hall of Fountains), looking south.

m. They are both blocked with stones but it appears that originally they had some sort of function in the building – to hold a suspended installation or to carry lighting fixtures (torches?). Two parallel depressions, identical in size and position, were found in the opposite alcove (L. 427).

The central semicircular alcove (diameter 4.8 m) was preserved to a height of 3.6 m. Its floor, from

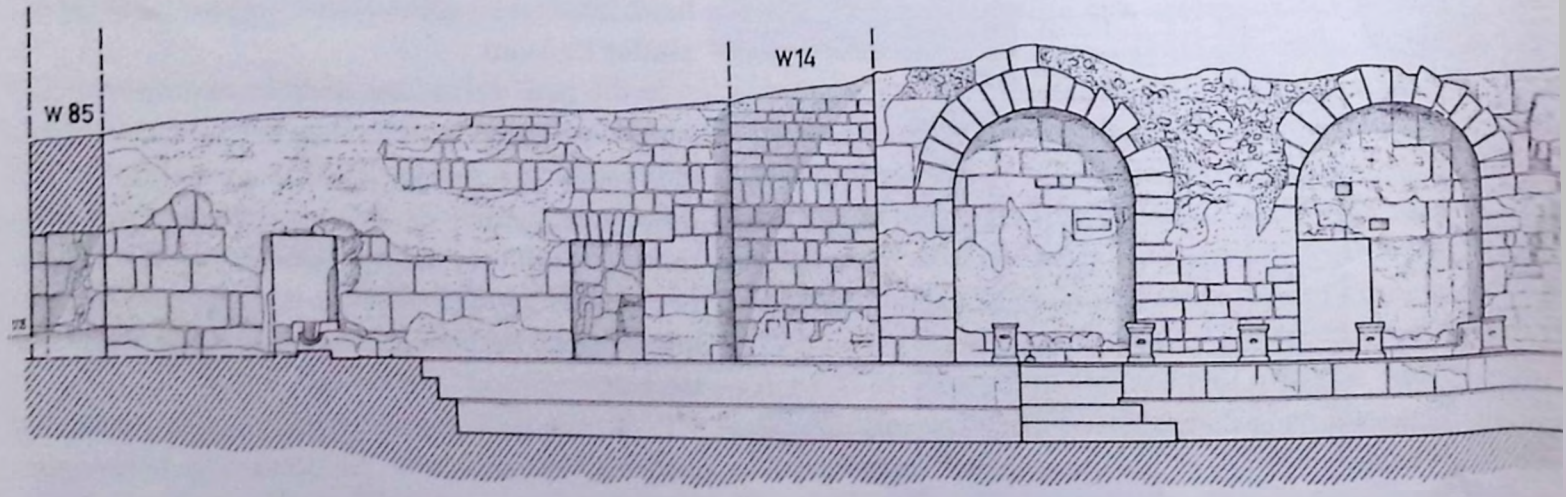


Fig. 137. View of the eastern face of the western long wall (W13) of Area D (Hall of Fountains) and the walls of the side wings (W96 on the north and W50 on the south)



Fig. 138. Pair of windows in the rectangular alcove (L. 434) north of the semicircular alcove in W13, looking west.

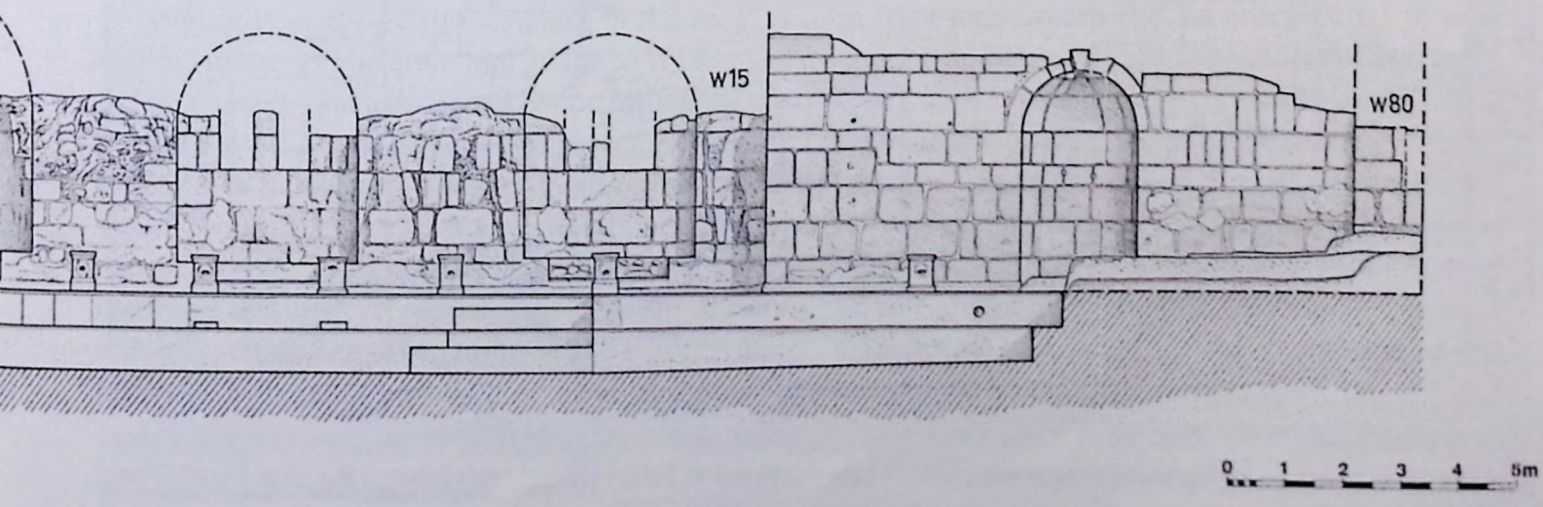


Fig. 139. Passage alcove (L. 420) between Areas D and A, looking west. Note the "Eudocia inscription" opposite it.

the last occupation phase of the baths complex, was exposed, and we may assume that beneath it there was no bathtub. Along the walls of the alcove, a stone bench clad with well-smoothened slabs is preserved. It is 0.55 m wide and 0.45 m high. The vertical cladding slabs are quite uniform, averaging 0.5 m in width. In contrast, the horizontal slabs are 0.5-0.7 m wide and their flaring shape conforms to the rounded shape of the alcove.

Two openings were discovered in the rear wall of the rectangular alcove (L. 420) to the south of the semicircular alcove; one served as a passage into neighboring Area A and measured 1.6 m in width and 2.6 m in height (at a later stage it was narrowed; Fig. 139). The other, 0.2 m wide and 0.6 m high, was later breached in the northwestern corner of the alcove in order to install a lead pipe leading to the northeastern bathtub of Area A.

Several inscriptions were once affixed to the face of W13. One of them was found *in situ* in the center



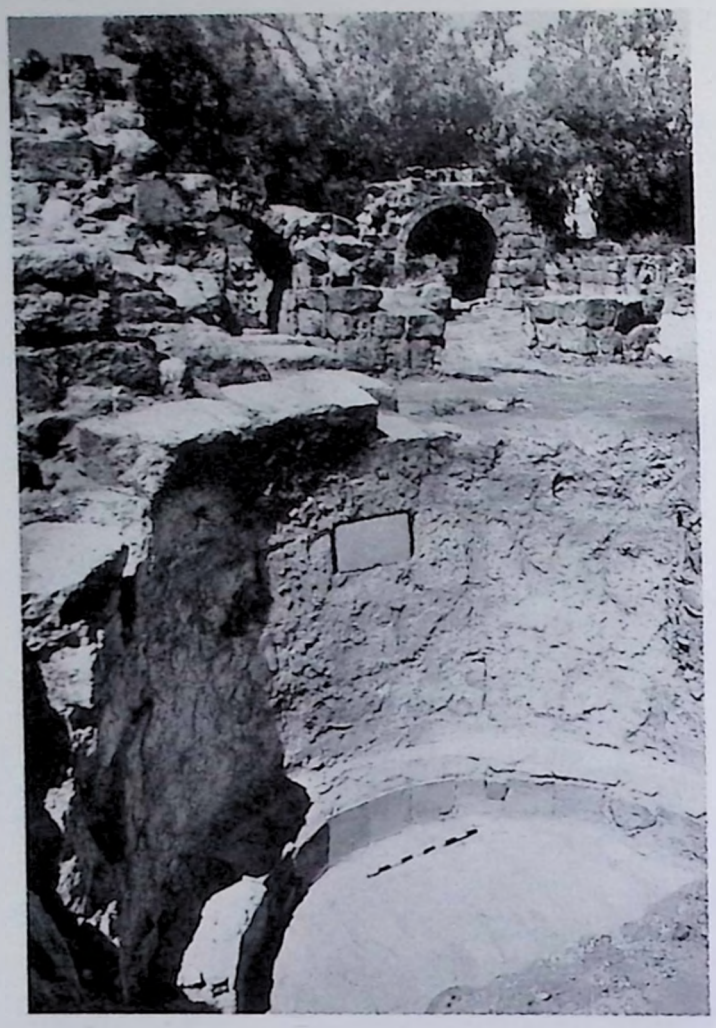


Fig. 140. Semicircular alcove (L. 419) in W13, looking northwest. Note the Mu'awiya inscription found *in situ*.

of the middle semicircular alcove, at a height of 2.1 m above the floor (Fig. 140). It was housed in a carved depression designed for this purpose. The dimensions of the depression, 0.45×0.75×0.07 m, are slightly larger than those of the inscription itself.

The central semicircular alcove (L. 419) was roofed by a semidome. The spring of this semidome begins 2.75 m above the floor, at the same height as the springs of the vaults of the adjacent alcoves. From this information, we can reconstruct the semidome to a height of up to 5.3 m above the floor.

W15, delimiting the central part of Area D on the north, is preserved to a height of 4.7 m above the floor and is 1.2 m thick (Fig. 141). In this wall there are entrances to the apsidal rooms on both sides of the pool. The width of the western entrance is 1.2 m and its height is 2.1 m (Fig. 142). Its threshold is high and, together with the protruding doorposts, attests to the presence of a door. The eastern entrance is similar in detail, being 1.1 m wide and 2.1 m high (Fig. 143). The lintels of both entrances consist of flat arches. Three of the five lintel stones in the eastern entrance have round holes, identical in shape and position to those found above the entrances in Area A and Area B. It appears that they held a fixture for a curtain or some kind of decoration (garlands).

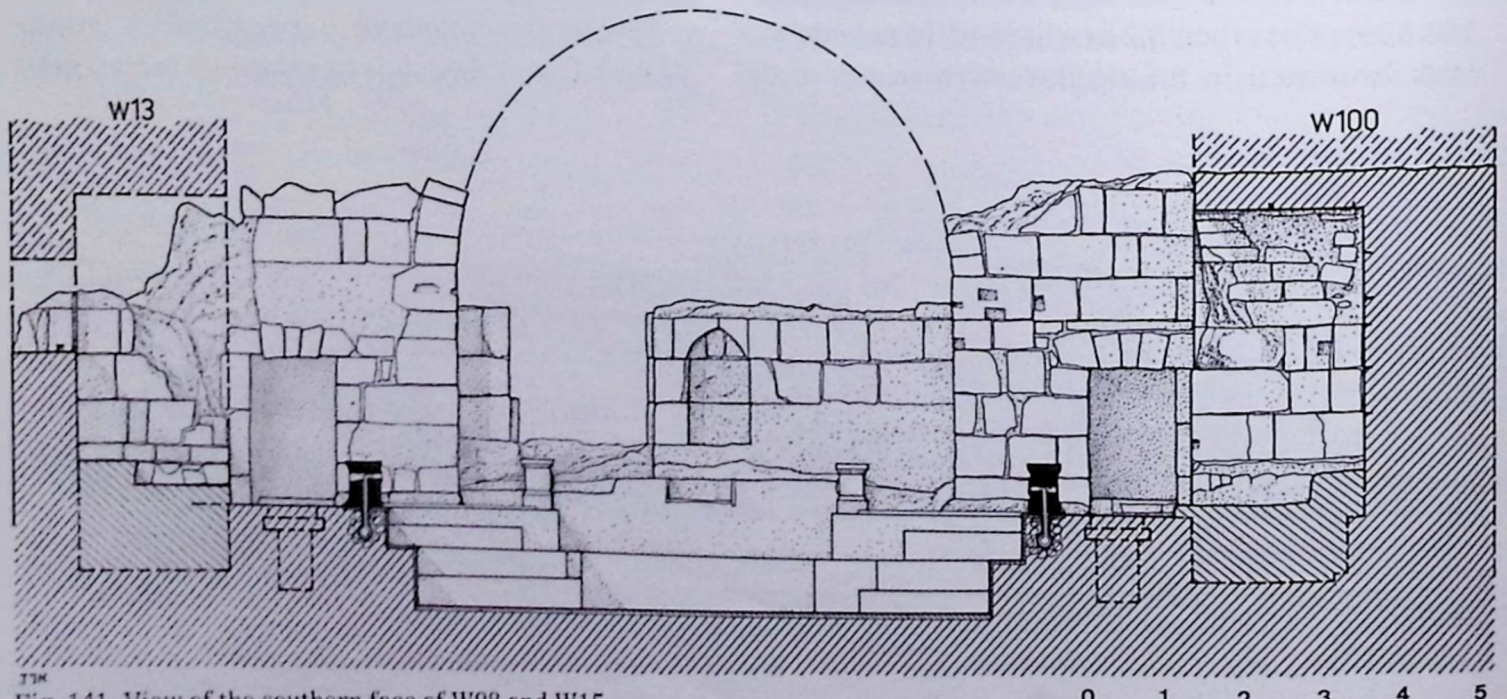


Fig. 141. View of the southern face of W98 and W15.

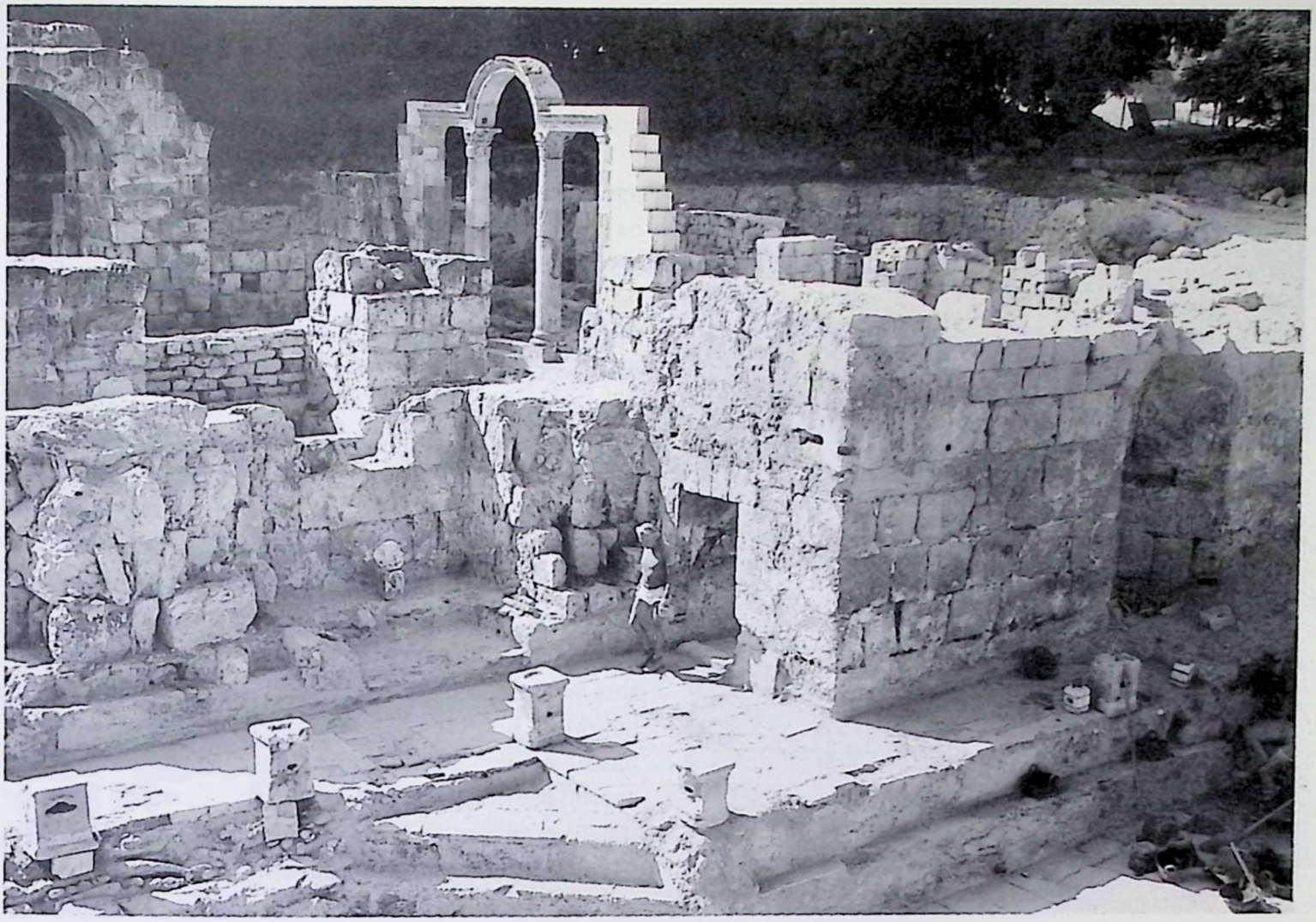


Fig. 142. Northwestern walkway of Area D (Hall of Fountains), looking northwest. Note the entrance into the southern apsidal room (L. 525) connecting Areas D and E.

On the western side of the eastern entrance and slightly above it are four carved depressions – two rectangular and two smaller, square ones. Identical depressions were found on the northern face of W14 (see below). According to one theory, these depressions held torches for lighting the hall.

The eastern long wall (W100) of the central part of Area D is preserved to a height of 4.8 m. It is similar in its construction and shape to W13.

The central space of Area D is delimited on the south by W14, 1.2 m thick and preserved to a height of 4.6 m (Fig. 144). The western end of the wall is built of relatively small limestone ashlars and its courses range in height from 0.2 m to 0.5 m. In contrast, the eastern end is built of large ashlars and its courses are 0.8 m high. At the western end of W14, a diagonal entrance connecting Areas D and G is preserved in its entirety. It is 1.2 m wide and 2.3 m high. Its monolithic basalt lintel is 1.6 m long and 0.3 m high. At a later phase of occupation, the arch of W14 was buttressed by two large basalt pilasters.

The southern wing of Area D, measuring 13.3 m in length and 7.2 m in width, is well preserved. The western wall (W50), separating it from Area G, is preserved to a height of 4.4 m. At a distance of 2.9 m from its southern end, an entrance 1.1 m wide and 2.1 m high was built to connect the two halls. North of the entrance, a fairly small alcove, 1.25 m wide and 2 m high (L. 441), is preserved in its entirety. At the bottom of the alcove, a channel having an identical width and depth – 0.16 m – was cut through W50. The channel was most probably for a lead pipe (a segment of lead pipe – 0.14 m in diameter – was found on the other side of the alcove, beneath of floor of Area G).

The wall (W85) delimiting the southern wing on the south is preserved to a height of 3.2 m (Fig. 145).

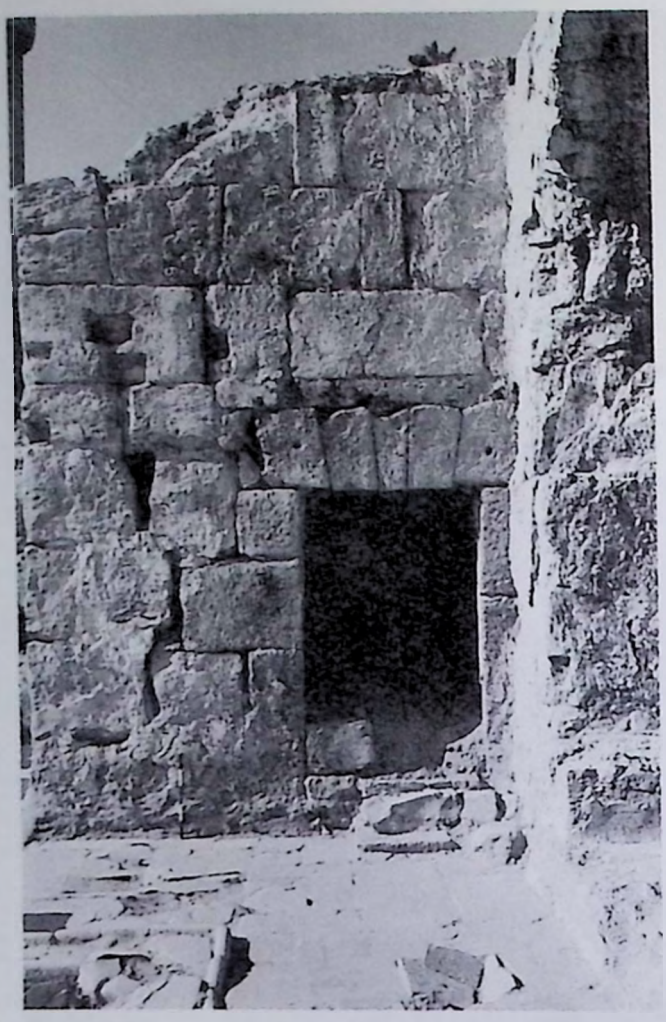


Fig. 143. Entrance in W15, looking north.

Its length is equal to the width of the wing, i.e., 7.2 m, and its thickness is 1.3 m. The northern face of the wall is coated with thick layers of plaster (4-5 cm) which covered the two blocked entrances. These entrances, which are identical in height (2 m) but unequal in width (1.5 m in the western entrance and only 1.3 m in the eastern one), are equidistant from the hall's axis of symmetry.

The eastern wall (W73) of the southern wing is preserved to a height of 4.5 m; it is 13.4 m long and has a thickness of 2.3 m (Fig. 146). No less than five entrances were built in this wall. All except for the northernmost one were blocked and coated with thick layers of plaster at a certain stage. It is thus difficult to identify them, but careful examination shows that all five belong to the original building stage. The entrances here are also arranged symmetrically: the three central ones have arched lintels while the two side ones have straight lintels. The three central entrances are identical in size – 1.5 m wide and up to 2.6 m high (Fig. 147). The distance between them is identical to their width.

The two side entrances with straight lintels are smaller, measuring 1.1 m in width and 2.1 m in height. Their frames are built of well-dressed basalt ashlars, whereas those of the three arched entrances are built of limestone. As noted, four of the five entrances were completely blocked. The fifth (northernmost) entrance was partly blocked by one of the later basalt pilasters of W14, which supported the arch. This pilaster narrowed the passageway to a width of only 0.6 m. The systematic blocking of these entrances, including the partial blocking of the northernmost one (the only entrance that remained open for passage), is

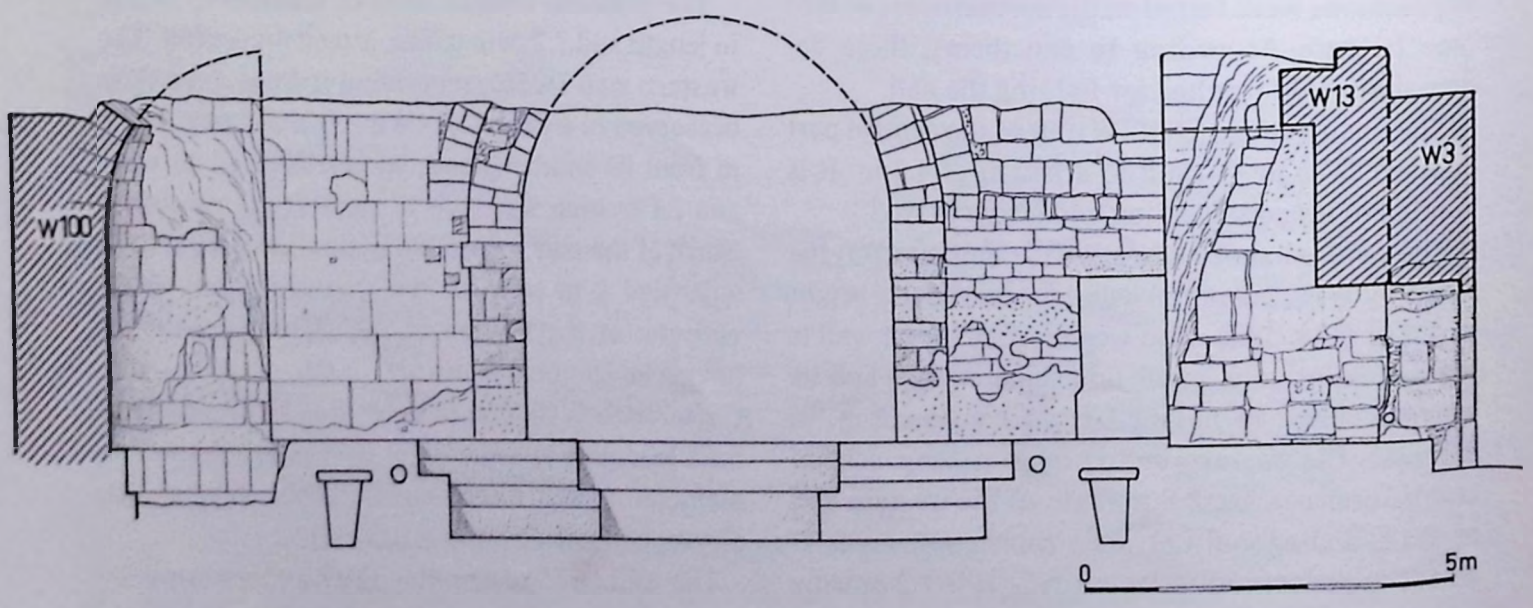


Fig. 144. View of the northern face of W14 and lateral cross section of two of the alcoves in the hall's long walls.

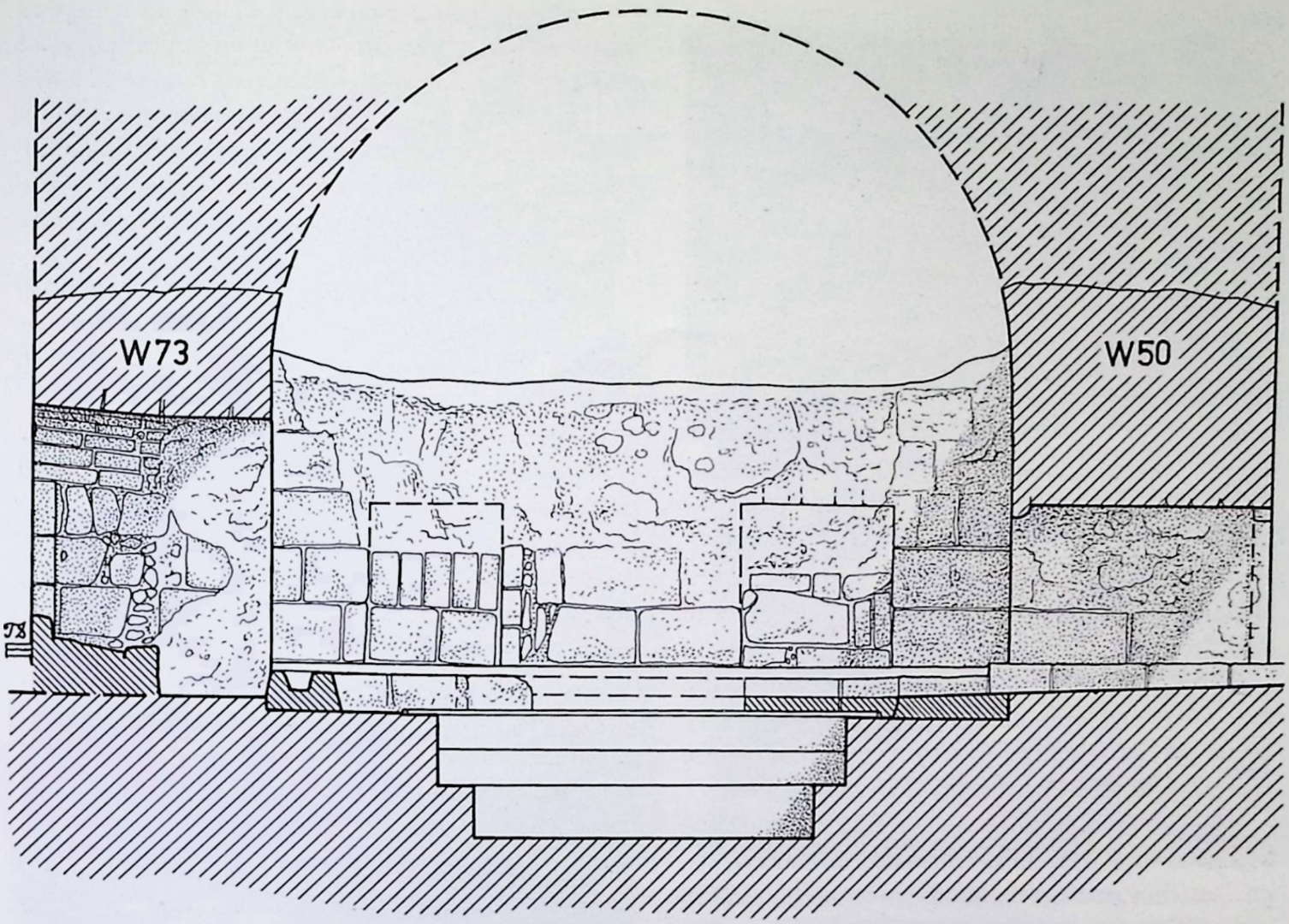


Fig. 145. View of the northern face of the southern wall (W85) of Area D and longitudinal cross section of two of the entrances in the southern wing.

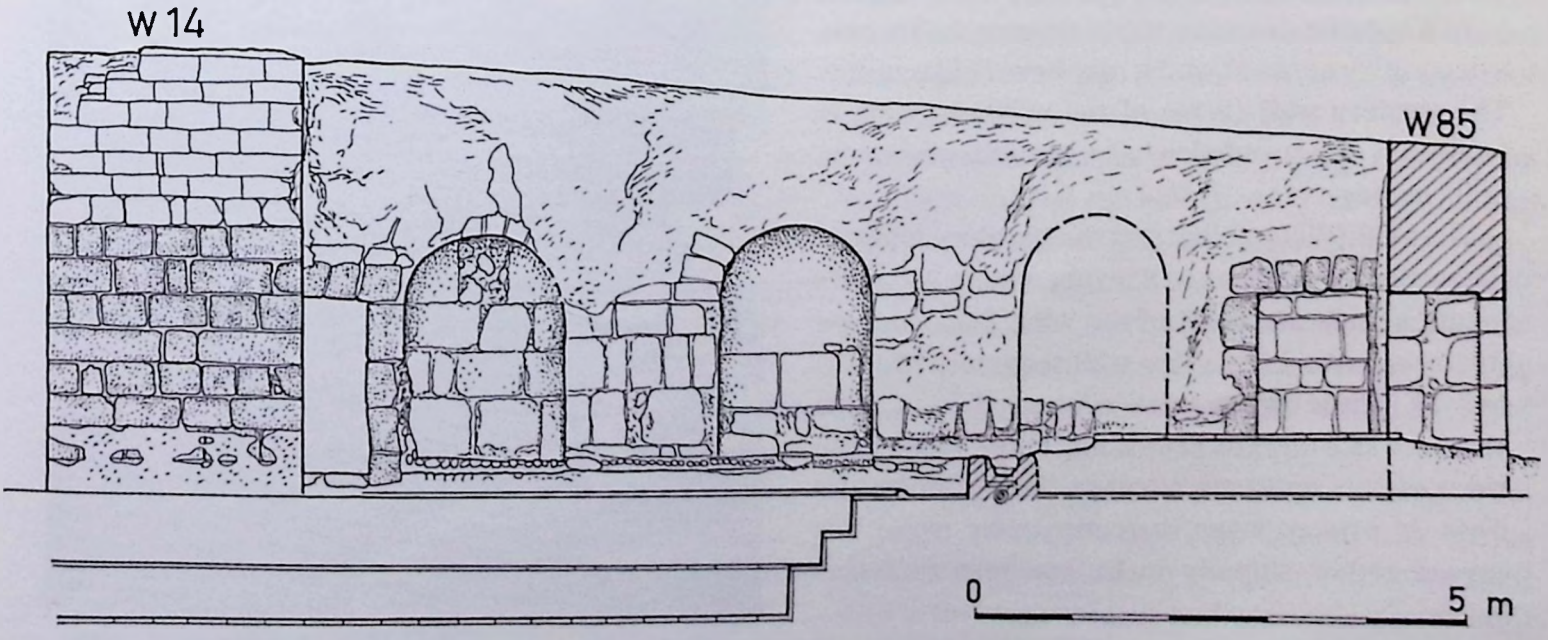


Fig. 146. View of the western face of W73. Note the blocked entrances into Area J.



Fig. 147. Three of five entrances in W73, looking northeast. Note the engaged pilaster blocking part of the northernmost entrance.

evidence of functional changes that took place in this part of the baths complex. The key to understanding these changes is most probably to be found in Area J, east of Area D; however, only a very small part of this area was excavated and we are therefore unable to draw any firm conclusions.

The northern wing of Area D differs from the southern wing. It is 7.1 m wide and 10.3 m long, i.e., ca. 3 m shorter than the southern wing. Its eastern wall (W97) is preserved to a height of 4.3 m. The three lowest courses are built of basalt while the upper courses are built of limestone. In the middle of the wall is a semicircular niche (diameter 2 m), once probably cladded with marble slabs, with small round holes at its center. This niche did not have a specific function; it was most probably only a decorative element, and it may have held a statue. The western wall (W96) of the northern wing is similar in detail and also has a semicircular niche at its center.

The wall (W80) delimiting the northern wing on the north is preserved to a height of only 2.7 m. Its length equals the width of the wing, i.e., 7 m, and its thickness is 1.2 m. This wall separates Areas D and H. These areas were connected by a wide entrance (1.8 m). The protruding doorposts on both sides of this entrance attest to the presence of a door. At a later stage, a semicircular niche was carved rather sloppily in its southern face (see below).

The floor of the walkway around the central pool of Area D is well preserved. It is 1.65 m wide and paved with marble slabs having an average size of 0.5×1.1 m (several slabs measure 1.1×1.8 m). Later repairs were made in the pavement, when limestone and basalt slabs were incorporated. Many of the paving stones of the walkway were roughened with chisel marks to prevent the bathers from slipping.

An inscription of Eudocia, dating to the mid-fifth century, was incorporated in the western walkway, opposite the entrance connecting Areas A and D in the later stage. The removal of this inscription (L. 422) revealed the bedding beneath the walkway (Fig. 148), which is made of medium-sized fieldstones (with an average diameter of 0.2 m) bonded with a thick layer (0.35 m) of very hard, dark gray mortar. Beneath the bedding, the stone beams above a drainage channel were exposed below the western walkway.

The walkways at the southern and northern ends of Area D are wide. The area between the pool's

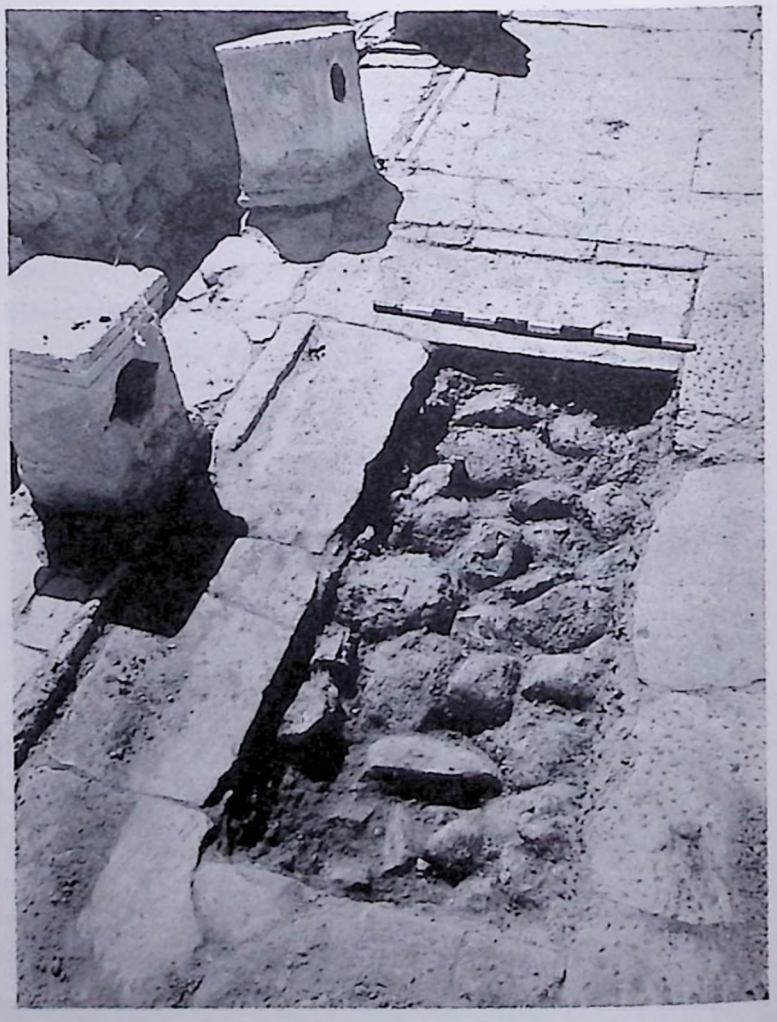


Fig. 148. Bedding beneath the Eudocia inscription (L. 422).



Fig. 149. Floor of the southern walkway in Area D (Hall of Fountains), next to W85, looking east.



Fig. 150. General view of the central bathing pool of Area D (Hall of Fountains), looking south.

southern end and the southern wall (W85) of the hall is covered with a well-built floor (Fig. 149) of marble slabs measuring 0.6 m in width and 1.4 m in length. At a later stage another floor was laid here. The walkway at the northern end of the hall is covered with a late plaster floor. The original floor in this section was not exposed.

The large pool of Area D (L. 438) follows the course of the hall's walls, i.e., its central part is wide, and its northern and southern wings are narrower (Fig. 150). Its overall length from north to south is 42.7 m, while its width is 8.9 m in the central part and only 3.3 m in the wings. The average depth of the pool is 1.4 m and thus its overall volume is ca. 380 m^3.

The floor of the pool is made primarily of slabs of bituminous stone, except for that of the northern wing, which is made of basalt slabs. The floor slopes down from west to east (height difference of 18 cm), toward two outlets. The paving slabs are between 0.5 and 0.7 m wide and ca. 1 m long (although some have a length of up to 1.8 m). The floor is well preserved; several sections, mainly toward the sides of the pool and in its wings, have survived *in situ*. It appears that the good preservation is due to the rapid covering of the hall with a layer of alluvium, which protected the floor.

In a probe beneath several paving slabs in the southern wing of the hall (L. 407) we exposed the bedding of the floor (Fig. 151). It is composed of two layers – a 3-4-cm-thick layer of gray, relatively soft cement and, beneath it, a layer of very hard, almost black mortar (of the same color as the bedding beneath the pool floor in Area A); the thickness of the lower layer was not measured.

The walls of the pool, which range in height from 1.2 m to 1.4 m, are made of slabs of bituminous stone, similar to those of the floor, and are coated with a layer of reddish hydraulic plaster. A shelf was built along these walls. In the middle of the hall



Fig. 151. Probe pit beneath the floor of the pool in the southern wing (L. 407) of Area D (Hall of Fountains).



Fig. 152. Northeastern corner of the central pool, looking southeast. Note the outlets in the floor of the pool.

it is 0.45 m wide and 0.7 m high. In the side wings, the shelf narrows to ca. 0.3 m and its height ranges between 0.5 m and 0.6 m above the floor.

Beneath several of the fountains, mainly near the northeastern corner of the central part of the pool, bases, 0.35 m long, 0.2 m wide, and 0.2 m high, were built on top of the shelf. Such bases were found beneath nine fountains, primarily those in the eastern part of the pool (Fig. 152). It is not clear why bases were not built beneath the other fountains.

Descent into the pool was via four corner staircases in the broader, central part of the pool and two staircases extending along the far ends of the wings. The corner steps are rounded, except for those in the northwestern staircase, which are straight.

Three steps were built at the southern end of the pool: the risers of the first two are 0.3 m high, while that of the lowest step is 0.55 m high. This staircase extends across the full width of the wing. In contrast, only two steps were found at the northern end of the pool (perhaps originally there were also three steps here that underwent changes).

Twenty-eight marble fountains flank the pool and supplied it with cold water. Many of them were found *in situ*, e.g., those in the southwestern corner of the pool's central part. The distance between them was more or less fixed: 1.5-1.6 m. The fountains stand opposite one another: eleven on either side of the pool's central part, four additional fountains at the beginning of the wings, and two more opposite each other in the northern wing. For some reason, there were no fountains in the southern wing.

A main lead pipe, long sections of which were exposed *in situ*, runs 0.4 m beneath the fountains (Fig. 153). This pipe had an outlet in the western face of the pool's wall in the northern wing, 1.4 m from the northwestern corner. Located 0.8 m above the floor of the pool, the outlet opening is funnel-shaped and has an outer diameter of up to 0.4 m. It appears that this outlet acted as a safety valve for releasing water in the case of a mishap; the outlet was probably plugged up when the fountains operated normally.

Water overflow during normal operation of the pool was drained via an upper outlet found next to the southeastern corner of the pool's central part. The outlet's opening has a diameter of 0.17 m and is located near the top of the pool wall, 1.3 m above

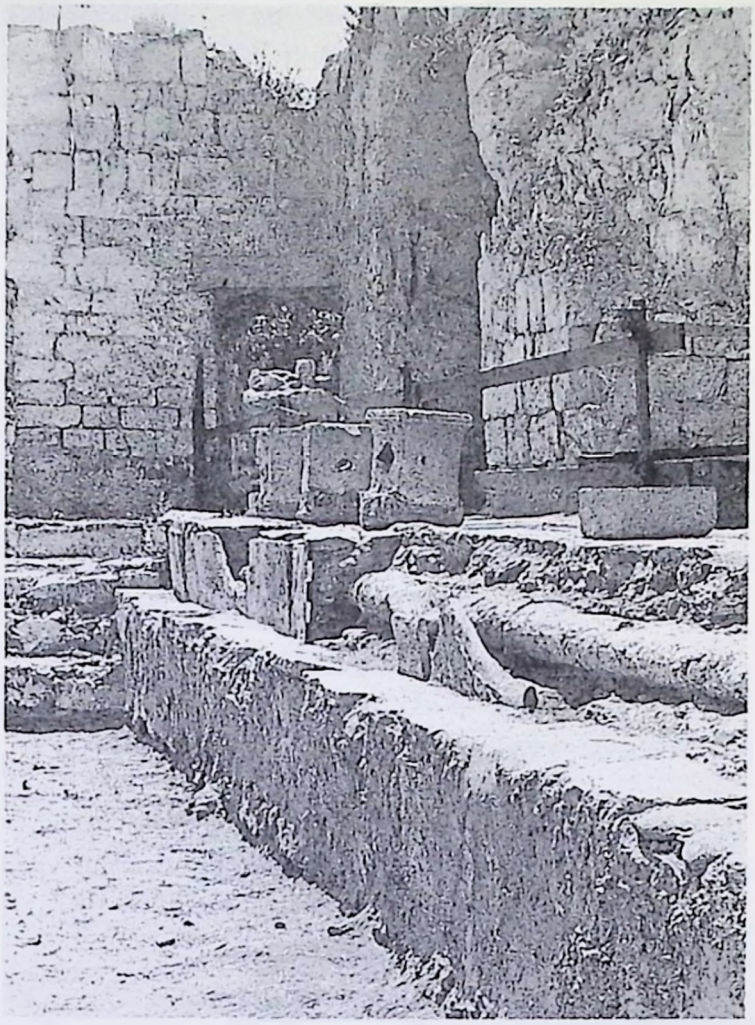


Fig. 153. Large lead pipe beneath the fountains on the western side of the central pool, looking south.

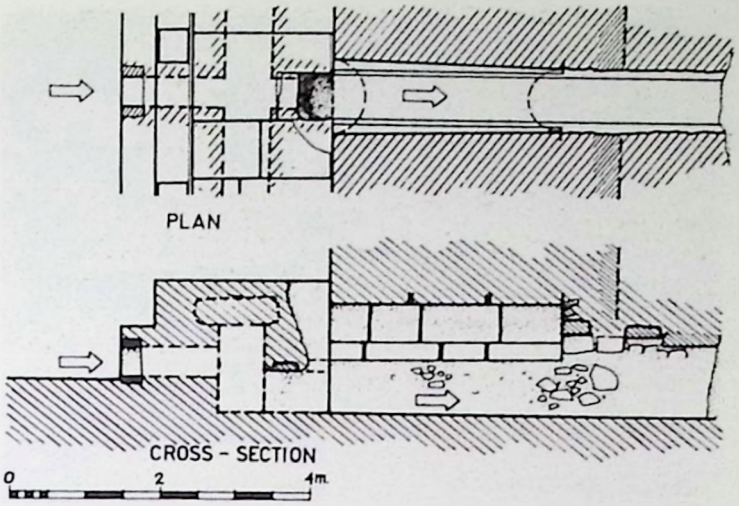


Fig. 154. Plan and lateral cross section of the southern drainage channel.



Fig. 155. Roofed vault of a section of the southern drainage channel, looking east.

the floor. From this outlet the water was led via a lead pipe to the outside of the building.

Two outlets at the bottom of the pool drained the water when the pool was emptied for cleaning and/or repairs. One of them is located at the southern end of the pool's central part, beneath the overflow drainage opening. This round opening (diameter 0.4 m), cut in a monolith, led the water eastward into the channel running beneath the walkway and beneath the eastern wall (W100) of the hall. The channel, 1 m wide (L. 428), crosses the circuitous channel around the pool and continues beneath the building (Fig. 154). This part of the channel is built of two parts: that in the west (3 m long) is roofed with a vault and that in the east is roofed with flat stone beams (Fig. 155). It appears that the section with the vaulted ceiling bore the enormous load of W100. The vault is built on a protruding course of stones 0.25 m high. Access to the channel was through an upper opening next to the line of contact between the walkway and W100.

The second drainage outlet is ca. 2 m south of the northeastern corner of the central part of the pool. This double outlet is composed of two round openings (each 0.15 m in diameter) on the pool's floor. Like the southern drainage channel, it conveys the water to the drainage channel running beneath the walkway. These drainage channels most probably led the water from the large pool of Area D, and perhaps from other pools as well, to the Yarmuk River; this system, however, remains unexcavated.

On either side of the pool's central part were four bathtubs located in the rectangular alcoves along the long walls of the hall. Only the two southern ones on the western side were uncovered.

One of these bathtubs, in the southernmost alcove (L. 423), was exposed in its entirety (Fig. 156). Its



Fig. 156. Bathtub in the southwestern alcove (L. 423) of the hall, looking northwest.

interior dimensions are 1.4×2.3 m, and its depth is 1 m, thus giving a volume of 3.2 m^3. The floor of the tub and its walls are made of slabs of smoothened bituminous stone of different sizes. The slabs of wall cladding are 0.5 m wide and 0.8 m high and are attached to the walls with long bronze nails (0.2 m long), several of which have been preserved *in situ*. On the eastern wall of the tub, a step 0.3 m wide and 0.35 m high was built above the floor. At the bottom of the tub's eastern wall is a round outlet (diameter 0.12 m) most probably intended for draining the water into the circuitous channel that ran beneath the walkway.

The remains of a similar bathtub were also found in the alcove north of it (L. 420), opposite the opening between Area D and Area A. This tub was not completely exposed (Fig. 157), but its dimensions and technique of construction, which are identical to those of the tub in L. 423, indicate that it belonged to the original building stage. On the basis of this find, we may conclude that there were small bathtubs in all the other rectangular alcoves of W13 and apparently also in the parallel ones of W100.



Fig. 157. Remains of a lead pipe *in situ* and a bathtub beneath the late floor in the passage alcove (L. 420) between Areas D and A, looking west.

The discovery of the bathtub in this alcove (L. 420) rules out the possibility that the opening between Areas A and D was originally intended for passage, since the bathtub occupies its entire area. The possibility that the opening was built at a late stage, when the tub went out of use, is rejected, since the doorposts on its western side are an integral part of the original construction of Area A. Thus, we may assume that originally this opening served as a window between the two halls. Only later on, after the pool was filled in and covered with a stone floor, could the opening have been used as a passage.



Fig. 158. Foundations of the semicircular alcove (L. 432) in W100, looking south.

There were no bathtubs beneath the floors of the hall's semicircular alcoves. This was established by means of probe in the eastern one (L. 432), where the 0.9-m-thick bedding beneath the floor was found as well as the foundations of W100 (Fig. 158).

Area D was roofed by three vaults, two narrow ones above the wings and a large one above the hall's central part. The remains of the vaults were found lying on the floor. The wings on the north and south of the hall were undoubtedly roofed with stone barrel vaults, the springs of which are

preserved at a height of 3.3 m above the floor, and thus their height was 6.7 m above the walkway and 8.1 m above the floor of the pool.

Larger voussoirs were found in the debris piled up in the central part of Area D. These are tall and narrow tufa voussoirs, up to 0.8 m high and 0.2 m wide. Other stone blocks were found directly on the floor. They are relatively small (0.2×0.5 m) and are



Fig. 159. Debris of the vault on the floor of the central pool of Area D (Hall of Fountains), looking northwest.

bonded to one another with whitish cement (Fig. 159). These stones were probably part of the upper course of the walls that supported the enormous ceiling vault.

At the time of excavation of the southern wing, a whole section of a vault was found on top of the layers of alluvium that covered its floor (Fig. 160).



Fig. 160. Remains of the vault of the southern wing found in the alluvium on the floor of the hall, looking north.

The length of the section is 2.3 m, its height is 0.6 m, and in its lower part a 2-3-cm-thick layer of plaster is preserved. The vault stones measure 0.6 m in height and 0.2 m in width and are made of relatively soft limestone (in contrast to the tufa voussoirs characteristic of most of the ceiling construction in the baths complex).

Other architectural elements related to Area D are the two apsidal rooms west of the northern wing. These well-preserved rooms are built of large limestone ashlars; the southern room (L. 525) is 3.9 m wide and 4.7 m long (Fig. 161). Its eastern end has a semicircular shape with a diameter identical to the width of the room. A shallow rectangular depression measuring 0.4×0.8 m, which may have housed an inscription (now missing), was carved in this wall, 2.1 m above the floor. The floor level of the room is identical to that of the walkway in Area D. Stone benches 0.5-0.8 m wide and 0.5 m high line its walls.



Fig. 161. Southern apsidal room (L. 525), looking northwest.

This room, which was actually a passageway, has three entrances. The western entrance faces Area E and is 1.1 m wide and 2.1 m high, while the southern entrance (described above as part of W15) faces Area D. Both have protruding doorposts for the installation of doors. The third entrance connected this room with the apsidal room north of it (Fig. 162). Its width is 1.2 m and its height is the same as that of all the entrances in the baths complex – 2.1 m. Its lintel is a flat arch.

The northern apsidal room (L. 508) is similar in size to the southern one. Its walls, built of large

limestone ashlars, are covered with a very thick layer of plaster, and on the floor is a bathing pool conforming to the shape of the room. The thickness of the pool's walls is 0.45 m. A wide entrance (2.3 m) links the northern apsidal room with Area E. It lacks protruding doorposts and thus offered free access to Area E.

The apsidal rooms fill the architectural space created between the northern wing of Area D and Area E west of it. We may assume, according to the principle of symmetry, that there were similar apsidal rooms to the east of the northern wing, but this area has not yet been excavated.



Fig. 162. Entrances in the southern apsidal room leading into the northern apsidal room (through W95) and into Area E (through W13), looking northwest.

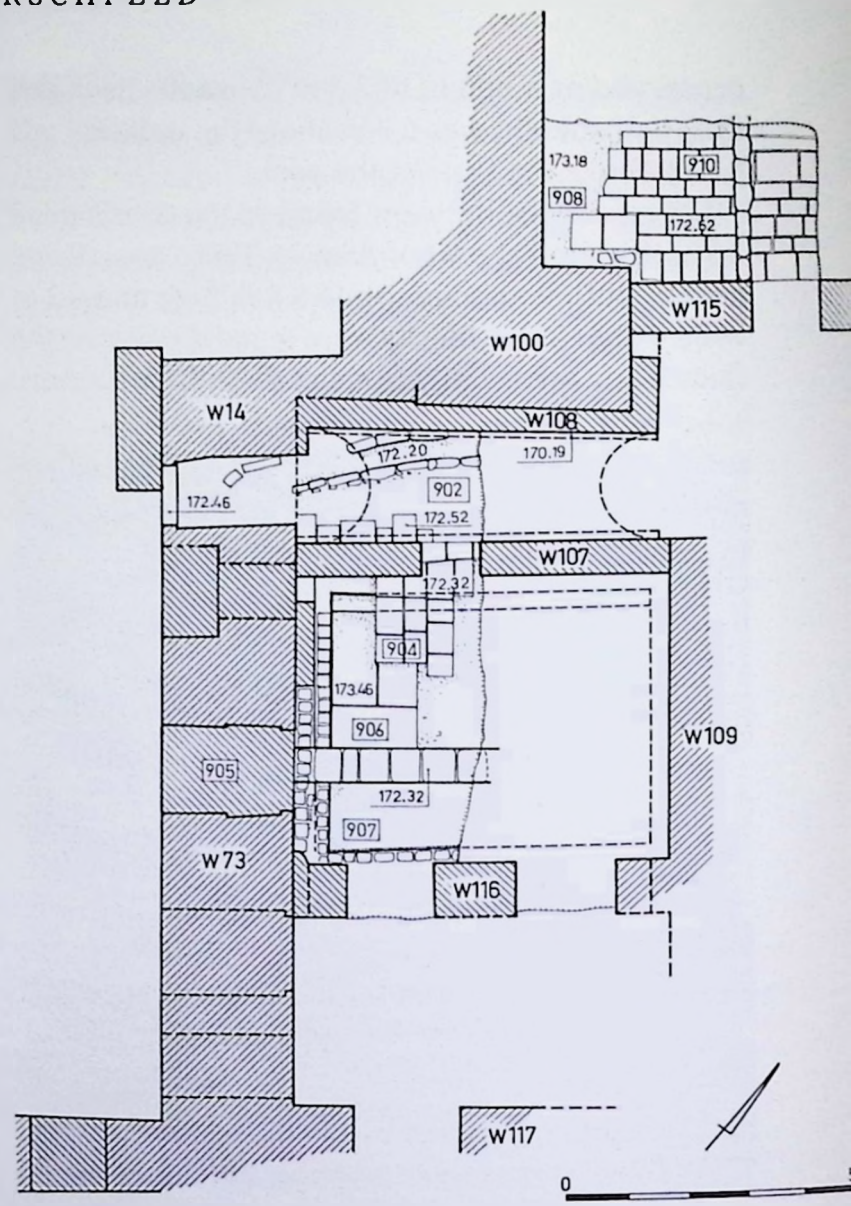


Fig. 163. Detailed plan of Area J.

Area J

Area J is a small area to the southeast of Area D. In this area, parts of open spaces and various rooms were exposed, the function and overall nature of which are not clear.

Three interconnected architectural units – although only partially excavated – could be identified among the remains in Area J: the southern end of a large courtyard (?) in the north, bathing rooms on the south, and a fully preserved corridor (L. 902) between them (Fig. 163), leading into Area D. The width of this corridor is 1.9 m and its vaulted ceiling rises to a height of 3.6 m (Fig. 164). The entrance in its western wall (W73) is 1 m wide and 2 m high. A 5.8-m-long section of the corridor was exposed; it broadens at its eastern end. Its walls are built of basalt, in contrast to the vault, which is built of tufa. On both sides of the spring of the vault, a cornice protrudes ca. 0.1 m from the face of the wall. The cornice is made of limestone blocks of varying lengths (0.45-0.9 m); its height is 0.2 m.

The northern wall (W108) of the corridor, which is 5.8 m long and 0.5 m thick, abuts the southern end of the eastern long wall (W100) of Area D. The southern wall (W107) is slightly longer (6.2 m) and 0.6 m thick. In the center of the corridor is an entrance leading to the pool to the south. The width of the entrance is 0.9 m and its height is 1.9 m. The floor of the corridor is made of smoothened basalt slabs, averaging 0.3×0.6 m in size. The floor level (-172.52) is slightly higher than that of the courtyard (?) to the north.



Fig. 164. Corridor of Area J and the entrance connecting it with Area D, looking west. Note the preserved vault.



Fig. 165. Southwestern corner of the courtyard north of the corridor, looking southwest.

The eastern end of the corridor opens onto an architectural space (most of this area has not yet been excavated) delimited on the north by W115, separating it from the area to the north. A 5.4-m section of this wall was exposed. It is 0.9 m thick and preserved to a height of 4.2 m. In its center, an entrance connecting the corridor and the area north of it is preserved in its entirety. The width of the entrance is 1.2 m and its height is exceptional – 3.3 m; above the entrance is a monolithic lintel (1.87 m long and 0.38 m high).

Although only a small area north of W115 (L. 910) was exposed (Fig. 165), we may assume that it formed part of a *palaestra* (large courtyard), the length of which equalled that of W100 bordering it on the west (at least 28 m). The eastern side of the wall is built of well-dressed basalt ashlars; the height of the courses is 0.3 m, and the average length of the stones is 0.7 m.

The floor of the assumed *palaestra* is made of well-smoothened basalt slabs with an average size of 0.3×0.5×0.15 m. The floor level is -172.62, ca. 0.1 m lower than that of the corridor.

In a probe conducted beneath the floor (L. 908), the floor bedding and foundations of W100 were exposed down to bedrock. The 0.8-m-thick bedding consists of dark gray mortar and is similar to that exposed beneath the floor of Area A. The basalt floor of the *palaestra* is apparently the original one. To date, basalt pavements have been found in only two other places in the building: in the entrance corridor and in the street north of it.

The rooms south of the corridor are interconnected. The room (L. 906) adjoining the corridor is rectangular (5×6.2 m). A bathing pool was exposed in it. The floor level (-173.76) of this pool is ca. 1.25 m lower than that of the corridor (Fig. 166). One could gain access to the pool either



Fig. 166. Pool south of the corridor in Area J, view from above. Note the remains of the late floor sealing the pool.



Fig. 167. Main entrance in the wall separating the southern wing of Area D from Area J, looking west.

from the corridor via the entrance in the room's northern wall (W107) or from the southern wing of Area D via the entrance in the western wall (W73). Other openings in W73 may have served as windows.

The entrance in W73 is arched; its lintel is funnel-shaped, widening from 2 m on its western side to 2.4 m on its eastern side (Fig. 167). Protruding doorposts on its eastern side indicate that a door once existed there.

The wall (W116) to the south of the pool is exceptional. It is 1 m thick and preserved to a height of 3 m (Fig. 168). A window in the shape of a large arch stretched from one end of the wall to the other. The arch is located 2.8 m above the wall of the pool and has a span of 5.6 m. Three pilasters – a freestanding one in the center (1.4 m long) and engaged ones on either side (0.9 m long) – were later added to support the arch. The area to the south of the window was not excavated.

The floor of the pool exposed in L. 906 is made of especially large slabs of greenish marble, measuring 0.8×1.1 m and 3-4 m thick. This is the only location where green marble was found and it was no doubt used to further beautify the pool. The walls of the pool are made of square bricks (0.2×0.2 m) having an average thickness of 3.5 m. The width of the walls is 0.25 m. A 0.25-m-wide step was built along the northern and western walls. The height of the step varies: on the northern wall it is 0.3 m while on the western wall it is 0.75 m. The southern wall of the pool is attached to the northern face of W116. The pool therefore occupied most of the area of the square room, except for its eastern part, about which we have no information because it has not yet been excavated. We were thus unable to determine the nature and function of this pool. One thing is clear, however: all the walls exposed in Area J continue eastward and southward, and thus



Fig. 168. Arch and buttressing pilasters south of the pool of Area J, looking south.

we know that the baths complex extended in these directions and covered a much larger area than that exposed in the excavation.

Area F: The Service Area

Area F is a long and narrow area west of the western facade of the baths complex (Fig. 169). On the north, it is delimited by a massive wall (W82) perpendicular to the western wall of the complex, and on the south by the flow of the spring toward the Yarmuk River. The overall length of this area is ca. 70 m and its width ranges from 8 to 10 m. The few entrances to this area, and its location outside the complex, indicate that it functioned as the baths' service area, at least in the original phase of occupation.

The wall delimiting Area F on the east is termed the "Wall of Windows." The very existence of

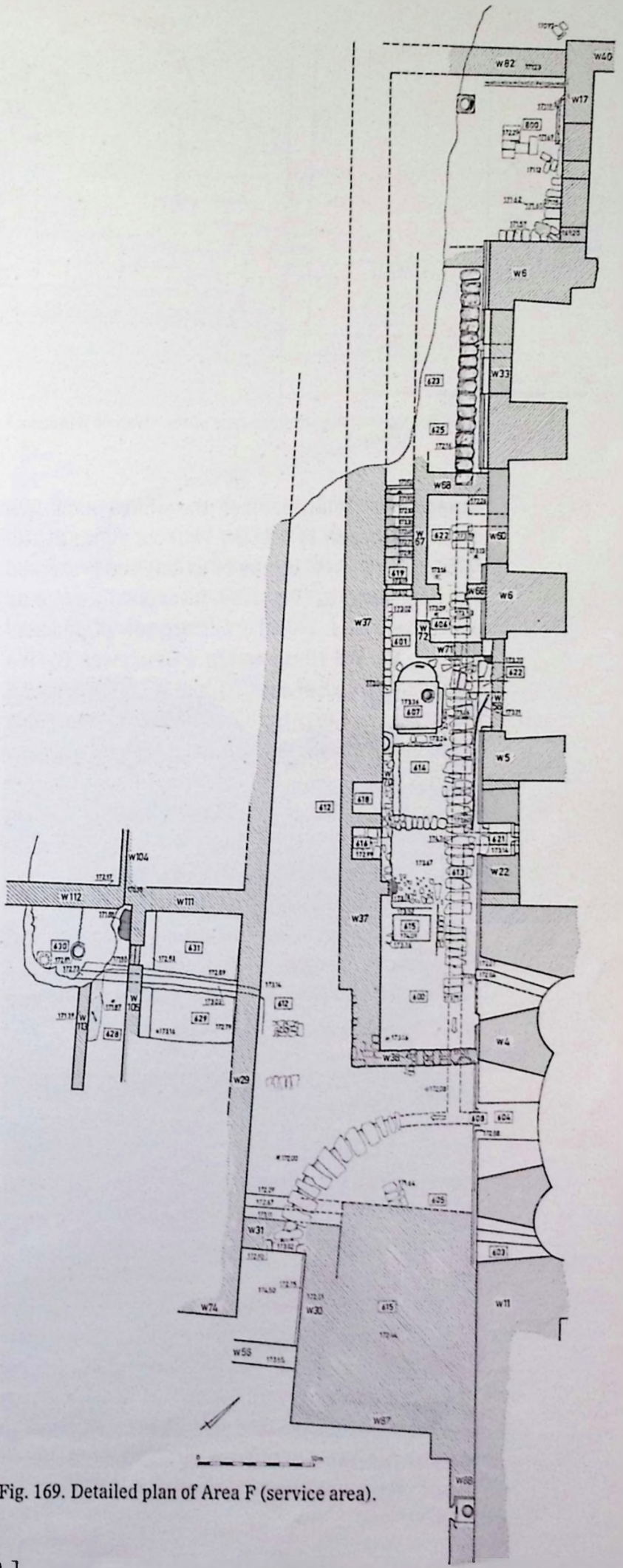


Fig. 169. Detailed plan of Area F (service area).

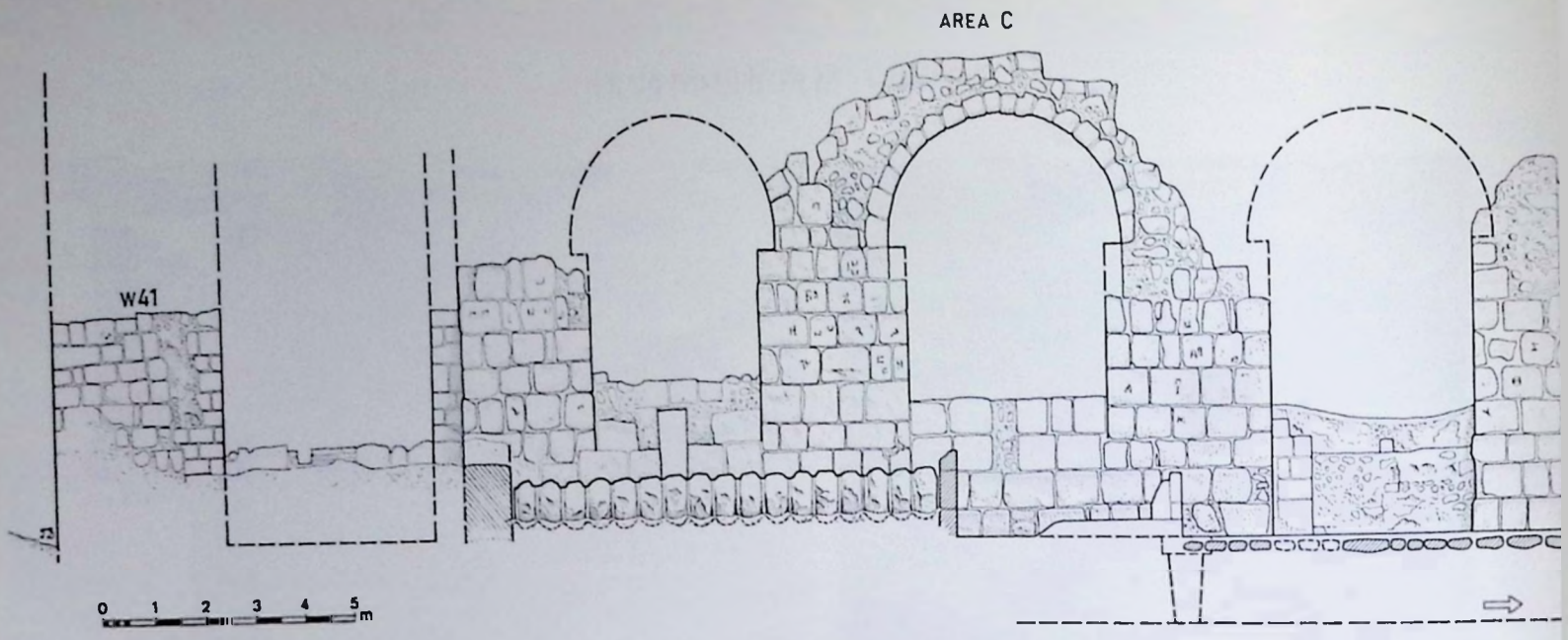


Fig. 170. View of the western face of the "Wall of Windows."

windows is evidence that the entire area was essentially open to the sky, without roofing. The "Wall of Windows" is over 60 m long and preserved to a height of 8 m (Fig. 170). It is actually made up of several walls: W6 (the western row of pilasters of Area C), W8 (the western wall of Area B), W4 (the western wall of Area A), and W11 (flanking the elevating pool in Area G). The courses continue along its entire length (their height ranges between 0.5 and 0.6 m), while the bottom courses jut out in a stepped fashion (ca. 5-6 cm in relation to each other). This uniformity indicates that the entire wall was built at one and the same time according to a preconceived design.

The wall (W29) delimiting Area F on the west was exposed for a length of 32 m and is preserved to a height of 2.2 m (Fig. 171). It is quite massive: 1 m thick and built of fieldstones bonded with whitish mortar. At the bottom of the wall one can identify the floor level (-173.41), recognizable by the horizontal line separating it from the wall's foundations. Above this line patches of hydraulic plaster are preserved. Thus, we may conclude that at a certain stage a pool was built along W29 (see below). The height of the foundations beneath the aforementioned line is ca. 1 m.

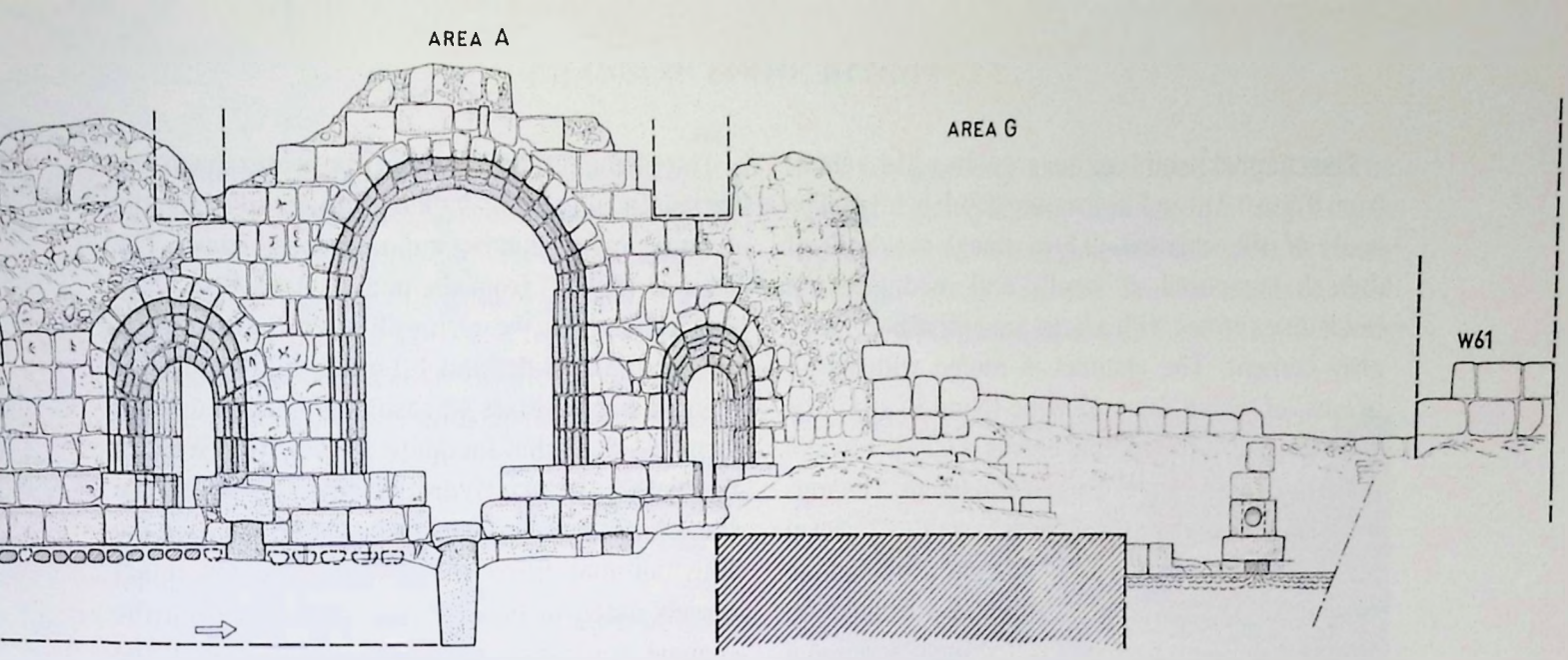
Additional proof of the existence of a pool along W29 is a channel, the opening of which was found 13 m from the southern end of the wall. The opening is relatively small, 0.2 m wide and 0.25 m high. The bottom of the channel is located slightly above the estimated bottom of the pool. The channel itself is preserved behind the wall (Fig. 172). It is 0.3 m wide and 0.2 m deep, and its walls are relatively



Fig. 171. Eastern face of W29, looking west. Note the channel opening in the wall's foundations.



Fig. 172. Channel running along the foundations of W29, looking east.



thin (0.2 m) and made of whitish *debesh*. A fragment of a lamp from the second century C.E. was found in the foundations of the channel (L. 630), and thus the channel may be attributed to the original building phase of the baths complex.

Only a 4-m-long section of the wall (W82) delimiting the service area on the north was exposed. Its westward continuation is hidden beneath the unexcavated area and probably joins the northern end of W29 at a right angle. W82 is a 1.1-m-thick massive wall built of large well-dressed basalt ashlars.

Access to the northern part of Area F, and from there to its other parts, was via an entrance in W41, at the northern end of the western wall of Area C. This large entrance (4.2 m wide) leads from the northern part of Area C into the northern part of Area F. At a later phase this entrance was blocked. As noted, this passageway was probably for the operators of the site only, as well as for bathers who intended to use the pool along W29.

Almost nothing has survived of the original floor of Area F. Indeed, several sections of a plaster floor were exposed in the excavation, but this floor was clearly associated with the late wall (W37) built parallel to the "Wall of Windows." Several sections of a mosaic floor are also attributed to a later building phase. We may thus assume that the original floor was later replaced by another one that was laid at the same level.

The main drainage channel was exposed along the foundations of the "Wall of Windows" (Fig. 173). A 24-m-long section was uncovered, but it is clear that further to the north the channel ran beneath the stone pipe exposed next to the western wall. We may assume that this channel continues northward up to the junction with the large drainage channels found in the northwestern part of Area C.



Fig. 173. Remains of main drainage channel along the "Wall of Windows," looking south. Note the stepped courses in the wall.

The channel itself is quite large. Its width ranges from 0.5 to 0.7 m and its average depth is 1.3 m. The walls of the channel (0.5 m thick) are built of *debesh* composed of small- and medium-sized fieldstones mixed with a large amount of hard, dark gray cement. The channel is roofed with basalt beams, of which some 35 were found *in situ*. The average size of the roofing beams is 0.3×1.1 m and their thickness ranges from 0.3 to 0.5 m. The tops of these beams slant from north to south. The level of the northernmost one is -173.44 while that of the southernmost one is -173.71, i.e., a difference in height of 0.27 m, probably reflecting the slope of the channel.

Above the main drainage channel of Area F a number of pipes of various types (e.g., lead, clay) were revealed, but they appear to belong to late occupation phases of the baths complex. The main find is a segment of a stone pipe *in situ*.

The channels that drained the water from the various pools of the baths complex reached the main drainage channel running north-south. The channel (L. 621) from the pool of Area B (L. 211) runs beneath the western wall of this area. It is 2.3 m long, 0.6 m wide, and 1.3 m deep. Its walls are built of large ashlars (measuring 0.5×0.6 m) that form part of the foundations of the "Wall of Windows" (W22). Hydraulic plaster holds the stones together to prevent seepage. The finds in the alluvium that filled the channel include intact vessels dated to the Byzantine period, when the channel apparently went out of use (due to the filling and covering of the pool in Area B).

The channel draining the water from Area A is preserved in its entirety (Fig. 174). It runs beneath the central windowsill of W4, links up with the main channel extending from the north, and together they trace an arched course to the Yarmuk River.



Fig. 174. Drainage channel of the pool in Area A (Oval Hall), looking east.

The channel from Area A is 0.4 m wide and built of well-plastered ashlars. Its roofing stones are large, measuring 0.5×1.2 m and averaging 0.4 m in thickness (Fig. 175). The level of the southernmost roofing stone is -173.82 – ca. 0.1 m lower than the height of the roofing stones of the main channel.

The arched channel ends at the parapet (W31) perpendicular to W30. A very special technique was used in the construction of both walls to ensure their durability under the great pressure exerted on them.

To the east of W30, a solid foundation of bricks (L. 615) bonded with very hard, gray mortar was found. As mentioned above, this foundation probably served as the base for a water tower that was part of the baths' cold-water system.

The mass of bricks in L. 615 is supported on the south by a retaining wall (W87). The eastern end of W87 is perpendicular to the western face of W11, in which the sluice gate was found (Fig. 176). The spring water running through the sluice gate flowed westward, merging with the water draining from the pools via the arched channel, and continued via a natural course to the Yarmuk River.



Fig. 175. Main drainage channel on the circuitous course to the Yarmuk, looking northeast.



Fig. 176. Sluice gate of the elevating pool in the western face of W11, looking southeast.

PHASE II: THE BYZANTINE PERIOD

The following review will attempt to isolate the Byzantine building stages in each of the excavation areas. For the reader's convenience, the areas will be presented in the same order as in the previous section.

The main changes which may be attributed with certainty to the Byzantine period are the filling of the three central pools in Areas C, E, and B and the laying of new stone floors above them. At the same time, the side bathtubs in Areas C and D were also filled and covered with new paving. This activity

can be dated by the inscriptions found incorporated in the floors covering these pools. The dating of the other changes attributed to the Byzantine period is based on less certain data, such as architectural seams, late floors, or the quality of construction, which is inferior to that of the Roman period but superior to that of the early Arab period.

Area H: The Entrance Corridor (see above, Fig. 52)

In Area H, consisting of the entrance corridor and the street north of the baths complex, practically no changes were found that can be assigned to the Byzantine period. Thus, the street continued to be used throughout the Roman-Byzantine period. Nevertheless, in the eastern part of the exposed section of the street there is a large patch indicating a later repair which we were unable to date accurately. The patch is distinguished by the sloppy arrangement of the paving stones and by their level, which is ca. 5 cm higher than that of the rest of the street. The exposed repair is 9 m long and 2 m wide, but it is clear that its unexcavated part is even larger. The stones in the area of repair are relatively small (0.3×0.5 m) and their orientation differs from the diagonal arrangement of the original paving stones. No probe was conducted beneath the repair area, and its attribution to the Byzantine period is thus hypothetical.

The excavation of the room (L. 804) adjacent to W92 was not completed, and we were therefore unable to determine its stratigraphic association. Along the eastern face of W92 we found a later addition consisting of three bases and four column drums laid next to one another (Fig. 177), thus increasing the thickness of this wall by 0.8 m (from 0.7 to 1.5 m). The association of this addition with the Byzantine stage of construction is also hypothetical.

The only elements in the entrance corridor (L. 803) that can be attributed to the Byzantine period are the fillings between the pilasters along the northern wall (W90). The quality of construction of the fillings between the pilasters is fairly good, only slightly inferior to that of the original pilasters. These walls were preserved to a height of 2.1 m above the floor. Ashlars in secondary use were



Fig. 177. Eastern face of W92 next to the staircase descending to the baths, looking southwest. Note the secondary use of architectural elements.

incorporated in the fills' courses, the heights of which range from 0.3 to 0.4 m (owing to the lack of uniformity in the height of the stones). These fills may be part of the wall's reinforcement added in the Byzantine period.

Area C: The Hall of Piers (see above, Fig. 65)

The columned portal separating the northern part of the hall from its lower, southern part could belong to Phase II (the Byzantine period). On the other hand, this component may be part of the original building, i.e., the Roman baths of the second century, that was damaged by an earthquake and subsequently restored. The entranceway is composed of a pair of columns found *in situ* between the two northern piers of the hall, and an arcuate lintel, all parts of which were found lying beneath the stone debris of the collapsed ceiling, south of the columns.

The lower parts of the columned portal that were preserved *in situ* are made up of column bases, bases of pilasters, and the lower half of the columns measuring 2.8 m in height. The other elements, i.e., the upper half of the columns, the capitals and parts of the arcuate lintel, were found lying on the late floor to the south of the columns, indicating that the general direction of movement during the earthquake of 749 which caused the collapse of the entire structure, including the columned portal, was from the north to the south.

The columned portal is very well constructed and richly ornamented (see below, Chapter 2); nevertheless, several factors lead us to believe that the entranceway, as we found it, was added to the hall after the earthquake of 363 C.E. Firstly, a distinct architectural seam separates the western pilaster from the pier behind it. This is a surprisingly rough and irregular seam. It appears that the builders of the columned portal did not bother to conceal it, but rather chose to emphasize it. This may have been their way of commemorating an earthquake that had destroyed parts of the building.

Secondly, close examination of the location of the columns reveals that they are not equidistant from the central long axis of the hall. This axis extends from the middle of the central niche in the southern wall (W5) to the exact center of the *opus sectile* carpet (L. 308) decorating the raised floor of Area C, north of the columned portal. This deviation could not be coincidental and lends support to the assumption that the columned portal was added to the hall at a later stage. However, one should also take into account that the pair of columns might have been erected in the same location during the Roman period and later underwent several changes.

On the basis of stylistic considerations (relating to one of the two Corinthian capitals), the construction of the portal is dated to the mid-fourth century C.E. On the other hand, all the other elements of the arcuate lintel and the second capital are dated to the second century (see Chapter 2). Thus, it may be assumed that the portal was erected in the first phase of construction and rebuilt in the fourth century. However, this is not certain; it is also possible that a wall or empty space existed there.

Was there a wall above the columned portal that spanned the length of the lintel, or did the lintel stand freely as a decorative element between the two piers? The upper parts of the portal's lintel and the voussoirs of the arch were left rough and unworked, possibly indicating that they merely served to support a wall above them. On the other hand, this section of stones was at a height of 6-7 m and its poor finish was therefore not visible. Since the architraves are two straight stone beams, we may assume that they could not bear the weight of a wall above them. On the basis of this consideration, it seems that this was a freestanding portal. Moreover, the presence of such a wall would have prevented the penetration of daylight from the windows of the hall's southern part into its raised northern part.

Another element in Area C that may be attributed with certainty to Phase II is the floor covering both the central pool and the three bathtubs between the piers of the western row (W6). The floor in the center of the hall, which is composed of three rectangular carpets, is characterized by the arrangement of its tiles in a diagonal checkerboard pattern (Fig. 178). The length of the carpets is uniform (7.8 m), but their width varies from 4.8 m (the central carpets) to 5.4 m (the northern and probably also the southern carpets). They are made up of alternating square marble and bituminous stone tiles (0.23×0.23 m); the marble tiles are white and 4 cm thick, while the bituminous stone tiles are dark colored and average 8 cm in thickness. The tiles were laid at an angle of 45° to the hall's walls. They are framed by a pavement of bituminous stone slabs measuring 0.55 m in width and 0.3-1 m in length.

The northern carpet, on which elements of the columned portal were found, is the most complete one. In the middle of the central carpet, i.e., at the center of symmetry of the hall's southern part, inscription no. 1 was found (Fig. 179). This inscription, measuring 1×1.1 m, is framed by smoothened limestone slabs (0.2 m wide). The face of the inscription shows the damage caused by the voussoirs that fell on it. On the basis of various considerations, the inscription is dated to the mid-fifth century (see Chapter 3). From the contents of the inscription, we learn that it was laid after the earthquake that destroyed parts of the building. The inscription also states that this hall was converted into a recreation area. As we shall see below, the pools in adjacent Areas E and B were also filled and covered by new pavements so as to create a large surface that could conceivably have been used for sports.

The level of the floor is higher on the sides (-173.08) and drops gradually toward its center (-173.40). This difference in height of more than 0.3 m was due to the sinking of the floor, especially in

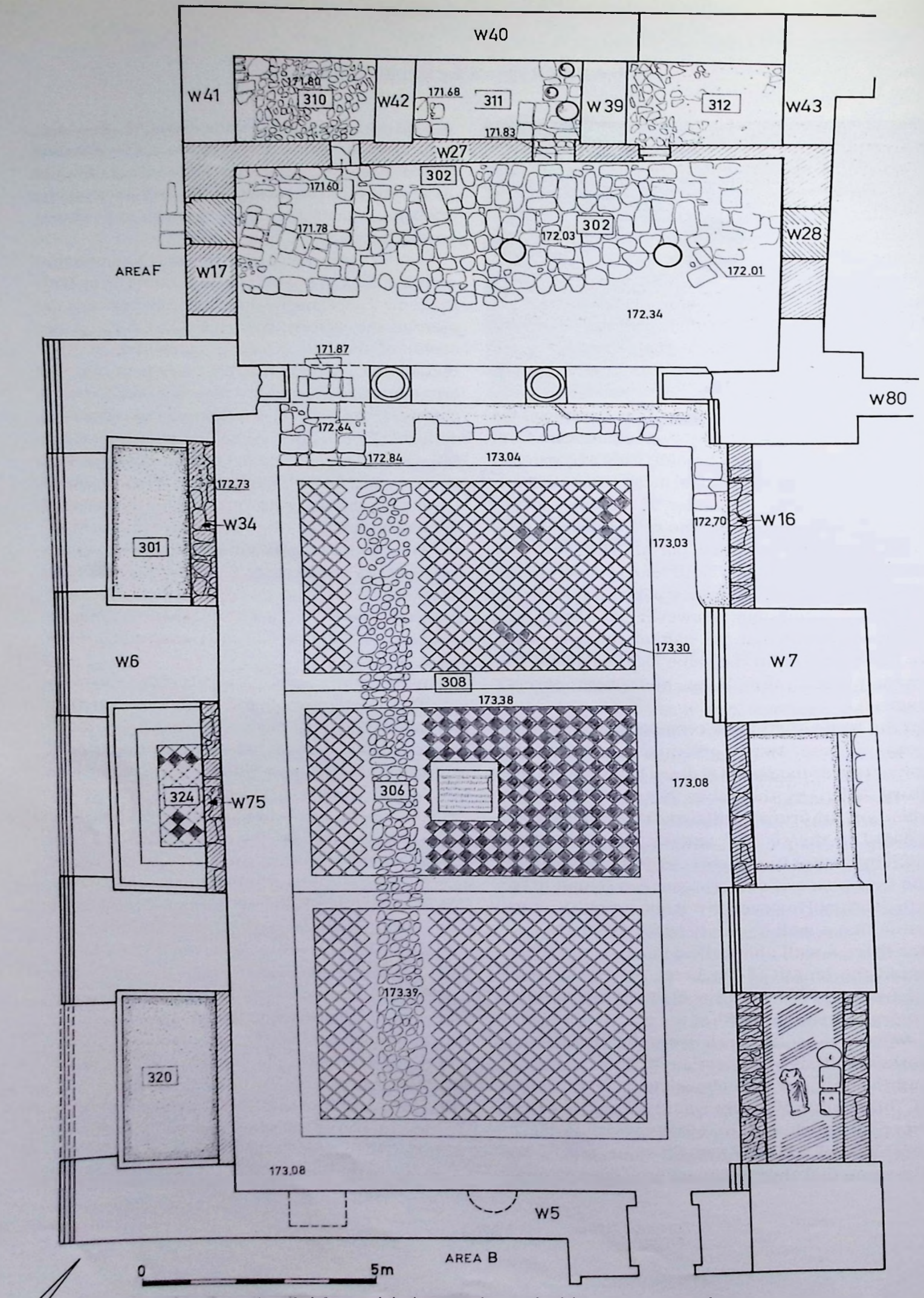


Fig. 178. Plan of the Byzantine tiled floor and the late remains north of the columned portal.



Fig. 179. Inscription no. 1 found *in situ*, looking south. Note the Byzantine floor tiles framing the inscription.

its center. From a cross section of the width of the floor we were able to determine the nature of the fill beneath it (Fig. 180). The overall thickness of the fill (L. 313) ranges from 1.2 to 1.5 m; below the 0.4-m-thick floor is a 0.5-m-thick light gray layer, and beneath it, overlying the floor of the pool, is a 0.7-m-thick layer of debris containing basalt stones of various sizes (up to 0.4 m).

The rich finds beneath the Byzantine floor (L. 313) include coins from different periods, the earliest one dating from the mid-third century and the latest from the time of Justinian II (565-578). In principle, on the basis of the latter coin, we should date the floor to the second half of the sixth century, since the latest find is the determinant. However, this late date is not in accord with the dating of the floor, as noted above, to the mid-fifth century. A possible explanation for this discrepancy is that although the floor was laid in the fifth century, following the earthquake mentioned in inscription no. 1, it underwent several modifications and renovations in later phases of its existence.

A final stage in the floor of Phase II is evidenced by a stone "strip" transecting the full length of the floor (Fig. 181). The "strip" is ca. 1 m wide and is made up of fieldstones with an average diameter of 0.4 m. It is located ca. 3.5 m to the east of W6 and extends from the southern wall of the pool to its northern wall. Since this strip cuts through the floor, it must postdate it. The level of the strip (-173.09) is identical to that of the floor; moreover, it is evident that an effort was made not to disturb the floor tiles on either side of it, factors indicating that the fieldstone strip is indeed later than the floor, but functioned as an integral part of it. The specific function of this strip or the purpose of its installation is not clear.

As noted, the three side bathtubs of Area C were also intentionally filled and covered with floors synchronous with that of the main hall. The best preserved floor is that above the central bathtub (L. 324) of W6 (Fig. 182). It is composed of diagonally-laid tiles identical in size and shape to those of the floor in the main hall, and around them is a frame of larger slabs (0.36×0.4 m) made of bituminous stone. The floor level (-173.08) is identical to that of the walkway.

Only the bedding beneath the floors covering the other two side bathtubs has survived. Below the bedding in the northern bathtub (L. 305), a total of

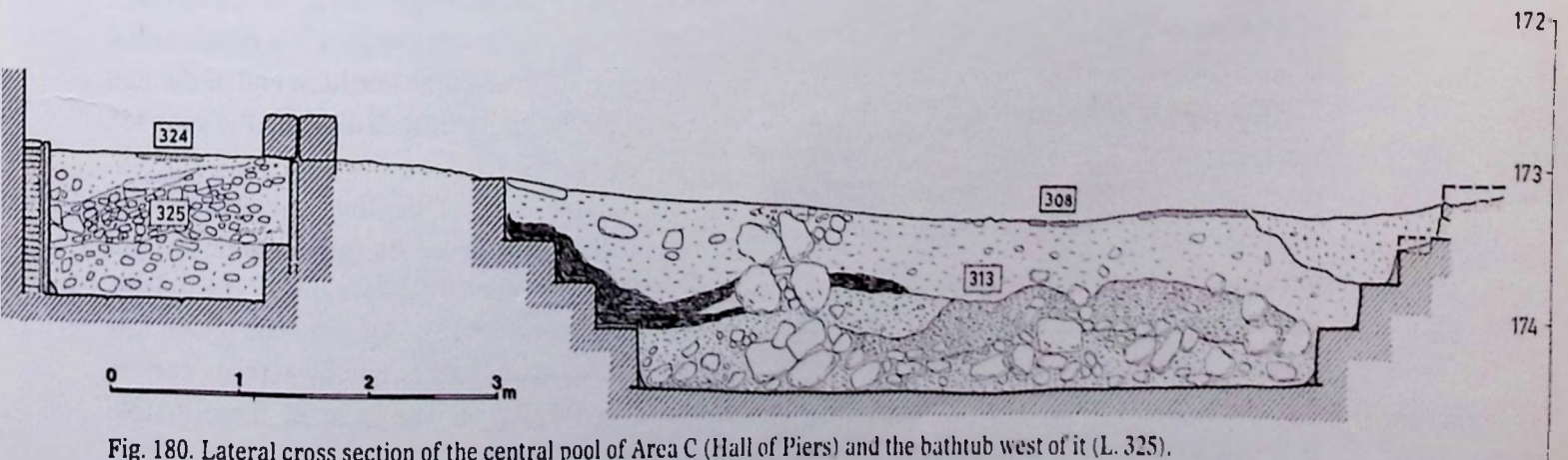


Fig. 180. Lateral cross section of the central pool of Area C (Hall of Piers) and the bathtub west of it (L. 325).



Fig. 181. Strip of round fieldstones cutting Area C (Hall of Piers) lengthwise, looking southeast.



Fig. 182. Tiled floor over the central bathtub of W6 (L. 324), looking north.

130 coins dating to the fourth-sixth centuries were found. The latest coin, as anticipated, is from the time of Justinian II – the second half of the sixth century C.E.

The finds in the southern bathtub are similar. A tightly-packed fill of fieldstones and layers of earth was found beneath the floor's bedding (L. 321). Most of the ceramic finds there are from the fourth-fifth centuries C.E., but some of the cooking pots are of a later date (sixth century C.E.).

Many modifications were made in the raised, northern part (L. 302) of Area C. However, most of them belong to the last building phase of the Umayyad period. The only finds that may be attributed to the Byzantine period are two Greek dedicatory inscriptions engraved on the pavement north of the columned portal. An Umayyad floor was laid on top of them; we may thus assume that they date from the Byzantine period.

Area E: The Hall of Inscriptions
(see above, Fig. 85)

Area E underwent substantial changes in the Byzantine period: the pool was filled and a magnificent marble floor was laid above it (Fig. 183). The hall thus ceased to be a bathing facility and, like the Hall of Piers west of it, became an assembly hall and recreation area. We are not sure whether the floor above the pool is a continuation of the original floor at the northern end of the hall or whether the entire floor dates from the year 455 C.E. (see below).

The marble slabs of the floor (at -172.96) are meticulously laid across the full width of the hall (Fig. 184). They are 0.6-0.9 m wide, 0.7-1.8 m long, and ca. 3-4 cm thick. The largest slab, which was found near the hall's northwestern corner, measures 1.2×2.2 m. The color of these marble slabs is white or grayish, and many of them contain

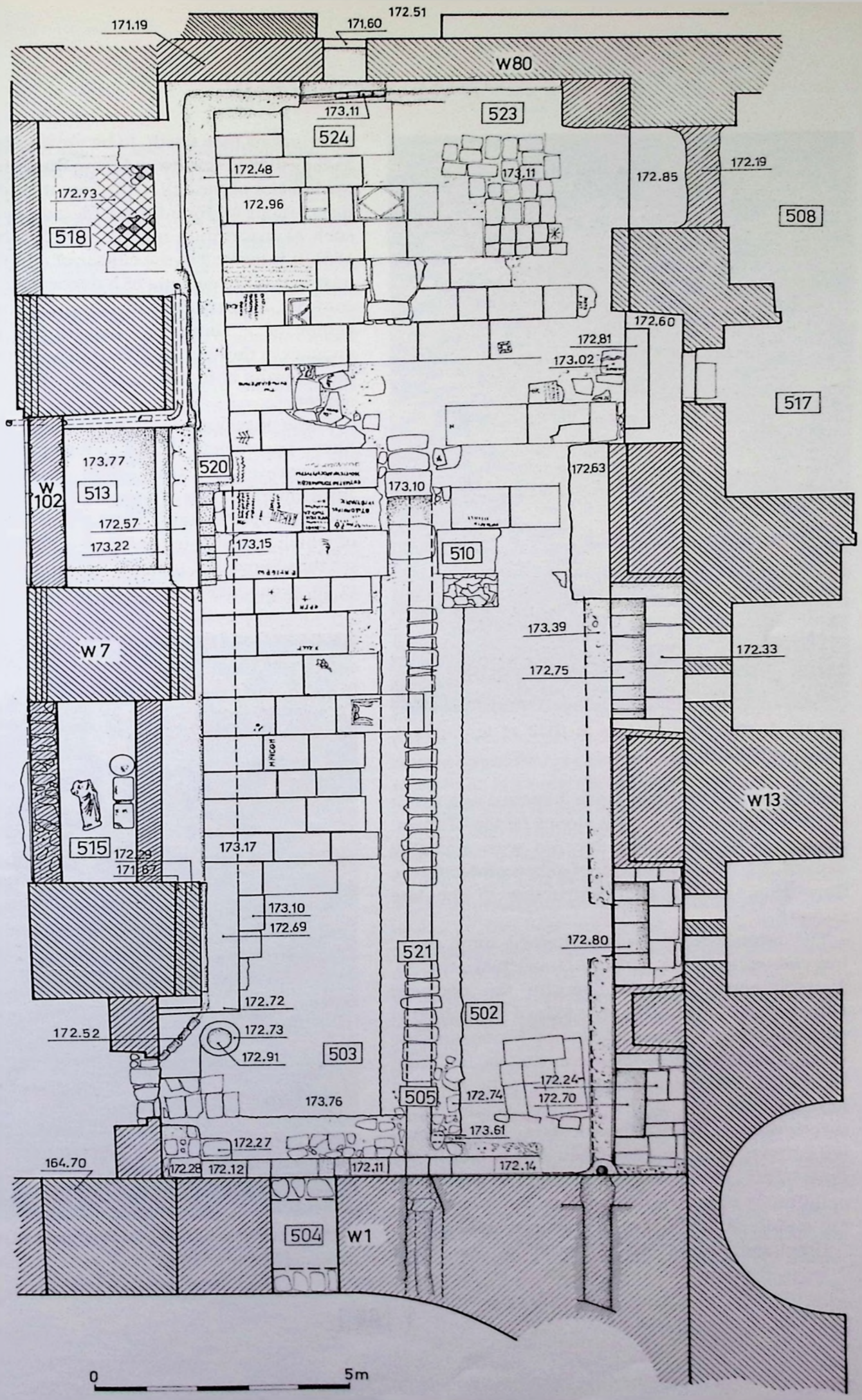


Fig. 183. Detailed plan of Area E (Hall of Inscriptions) in the Byzantine period (Phase II).



Fig. 184. Marble floor of Area E (Hall of Inscriptions), looking south.

dark veins. All the slabs were damaged as a result of the collapse of the vault stones on top of them; subsequently they were covered with a chalky deposit. A 2-3-m-thick layer of debris protected the floor from looting and destruction in the late periods.

The marble floor slabs contained some thirty inscriptions in Greek. The most important one is no. 2, prominently located opposite the northern entrance, on the central long axis of the hall. It is surrounded by a diamond-shaped frame, and the inscription itself faces those entering the hall from the north. On the basis of these data, we may assume that this is the earliest of the hall's inscriptions. It bears a specific date – 455 – which, we believe, was the year when it was laid in the floor. This inscription is similar in style and calligraphy to inscription no. 1, which is located in the middle of the floor of neighboring Area C.

Like inscription no. 2, most of the other inscriptions face north, to be viewed by the visitors as they moved southward from the entrance toward the interior of the hall. However, in addition to these inscriptions we found some facing other directions, such as inscription no. 10, which faces east (Fig. 185). It is located in the center of a paving slab, and next to it is the carving of a decorative amphora. In contrast, quite a few inscriptions are not at the center of a slab, e.g., inscription no. 6 which appears in the southeastern corner, and inscription no. 17 which is located near the northeastern corner.

These inscriptions are well engraved, and we have no reason to assume that they were incorporated in the floor in secondary use. Inscription no. 3 is exceptional in this respect; it is enclosed by a curtain-type frame, the eastern side of which is truncated by the adjacent paving slab; we thus know that the slab bearing this inscription is in secondary use. The engraving techniques

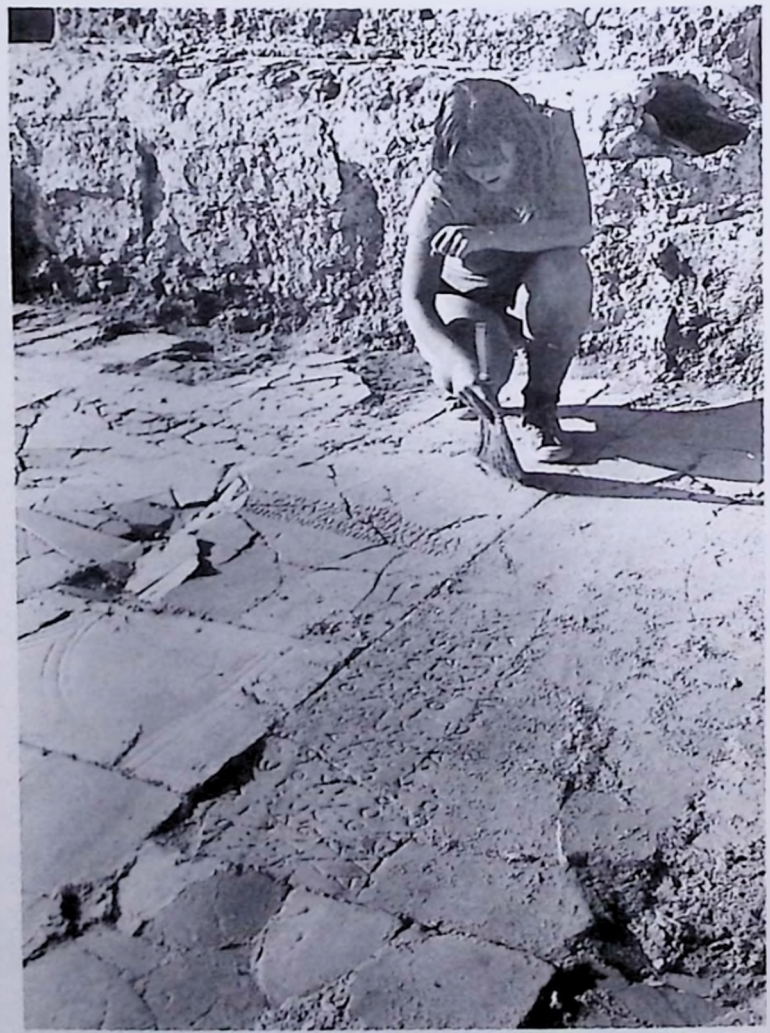


Fig. 185. Inscriptions nos. 6 (in front) and 10 (behind) found *in situ*, looking west.

employed for the rest of the inscriptions indicate that they were not all made at the same time but rather in stages. The inscriptions were probably added to the floor when donations were made from time to time by the people mentioned in them.

Different decorations, such as the amphora mentioned above, or floral motifs like the olive branch (?) in inscription 23, appear beside many of the inscriptions. Crosses are another popular motif, e.g., in inscription no. 11. It should be noted that in many instances the crosses were intentionally defaced; this is clearly visible in inscription no. 2. Such defacement may be linked with the iconoclastic decree issued in the first half of the eighth century. The hall was in continuous use until the end of the baths' existence in the middle of that century.

The fill beneath the floor is ca. 1 m thick and appears to have been intentionally levelled and compacted to ensure the stability of the floor above it. A number of modifications were made in the floor itself at a later stage, including the cutting of a subterranean tunnel (L. 521), resulting in the "intrusion" of late artifacts beneath the original floor.

In the locus beneath the floor (L. 516) we found fragments of colored plaster (frescoes) as well as glass mosaics – most probably part of the hall's decoration in its original stage, prior to the covering of the pool.

The marble floor of Phase II neatly abuts the four engaged basalt pilasters of W13, as well as the stone benches built between them (Fig. 186). The pilasters, built of roughly-dressed basalt and covered with a thick layer of whitish plaster, were preserved to a height of ca. 2 m above floor level. Their face is stepped, the lowest course protruding ca. 0.3 m in front of the pilaster and 0.1 m at its sides. The pilasters jut out ca. 1.4 m from the face of the wall, but their length is not uniform. The southernmost pilaster is the smallest one, measuring 1.5 m in length. The distance between it and W1 is 2.7 m. The second pilaster from the south is longer (3.05 m), the third pilaster is of similar length (3.1 m), while the fourth one is only 1.9 m long. Well-dressed basalt benches were built between the pilasters. Their width is 0.6 m and their height is 0.45 m; they are built on a stylobate of



Fig. 186. Engaged pilasters along W13, looking southeast. Note the depressions made in the floor of the hall by the collapse of the ceiling's vault.

hewn stones rising 0.2 m above the floor. The pilasters and the benches were probably built when the Byzantine floor was laid.

The engaged pilasters of W13 are not located opposite the piers on the western side of the hall (W7). This datum lends support to our assumption that the pilasters, like the floor, postdate the construction of the hall. The purpose of the pilasters was to reinforce W13 and help support the ceiling vault. We may safely conjecture that arches were built between the pilasters, even though no voussoirs were found in the debris.

Additional remains which can be attributed to the construction stage of the mid-fifth century are visible on the face of the hall's southern wall (W1). This wall, attaining a height of 8.4 m above the floor, is one of the best preserved walls in the baths complex. It was originally built of basalt; however, part of its northern face was rebuilt with large, well-dressed limestone ashlars. The average height of the courses is 0.6 m; the lowest course protrudes ca. 0.3 m. A 6-cm-thick layer of whitish plaster covers the face of the wall. The use of limestone points to a late renovation, which we are inclined to attribute to the mid-fifth century building stage.

In the center of W1 we found a fairly small entrance preserved in its entirety (Fig. 187). This entrance, which is 1.3 m wide and 1.8 m high, is located 7 m from the southeastern corner of the hall; its lintel is a flat arch consisting of five stones.



Fig. 187. Entrance connecting Areas E and A, looking southeast.

The entrance is incorporated in the limestone masonry of the northern face of W1, and we can thus attribute it to Phase II. It was intentionally blocked later on, in Phase III (see below).

Area B: The Passage Rooms (see above, Fig. 97)

The passage rooms of Area B underwent a fundamental change that can be attributed to Phase II – the laying of a new floor covering the entire area (Fig. 188). This floor links up with the paved surfaces covering the pools in adjacent Areas C and E, thus forming a single architectural unit characterized by the absence of bathing facilities. The artifacts found beneath the floor date it to the mid-fifth century.

The late floor of Phase II is well preserved. In the eastern room (L. 205) it is at a level of -173.16 and is made up of large paving slabs (Fig. 189) measuring 0.5×0.9 m. Modifications and repairs made in a late phase of its existence are noticeable on its surface.

The floor in the western room (L. 201) is also fairly well preserved (Fig. 190). It is at a level of -173.10 and is made up of paving slabs laid in rows across the width of the room. The western part of the floor (3.5 m from the western wall) is paved with basalt slabs (averaging 0.4×0.55 m in size), while the eastern part is paved with slabs of bituminous stone (averaging 0.5×0.9 m in size). The basalt slabs are in secondary use. Paving slabs made of well-smoothened limestone were found in the entranceway leading from Area B to Area A.

The bedding of the late floor in the western room (L. 211) consists of light clay and is 0.15 m thick;

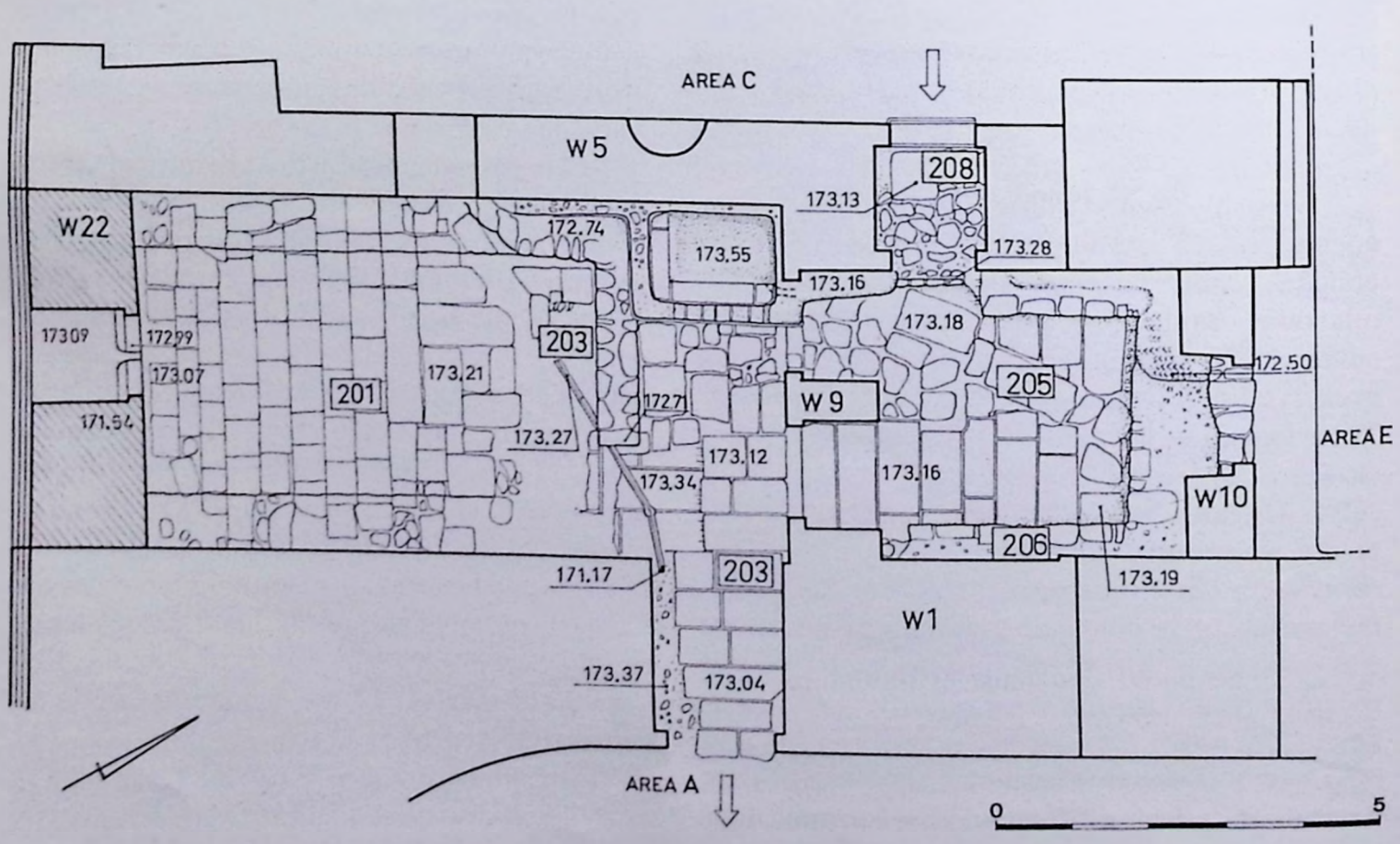


Fig. 188. Detailed plan of the remains of the late periods in Area B (passage rooms).



Fig. 189. Late stone pavement in the eastern room of Area B, looking northwest. Note the late channel cutting across the floor diagonally.

beneath it is a brown earthen fill rich in finds, including coins, clay lamps, etc. The coins range from the time of Diocletian (end of the third century) up to the time of Justinian II (565-578). Similar numismatic finds were discovered beneath the floors of the adjacent halls (E and C); as noted above, this material could lead one to assign a late date to the laying of the floor – the end of the sixth century; however, we believe that it was laid in the mid-fifth century and later underwent repairs and renovations.

The significant finds beneath the floor include many clay lamps within the layers of fill (Fig. 191). It should be noted that most of the lamps were revealed in the lower layer immediately above the pool floor. The lamps of this type (the so-called "biconic lamps") are dated to the fourth-fifth centuries C.E. (see Chapter 7). Their discovery on top of the pool floor substantiates our assumption that the pool was filled in the mid-fifth century C.E. The lamps probably fell to the bottom of the pool during the earthquake that demolished the building and were left in the bedding of the late floor.

Additional artifacts found beneath the floor of L. 201 include fragments of voussoirs and building elements, as well as many pieces of plaster and marble. Among the masonry we also uncovered a round basin open at both ends, which may have served as a fountain. It appears that when the floor was laid above the pool the debris was not removed but rather covered.

Another modification to be attributed to Phase II is the blocking of the large west-facing window by a late wall (W8), the thickness of which was the same as that of the pilasters on either side of it – 1.6 m. In the center of this wall is a 1.1-m-wide entrance offering direct access from the passage rooms to Area F. The doorposts are on the eastern side of this entrance.



Fig. 190. Late stone pavement in the western room of Area B, looking east.

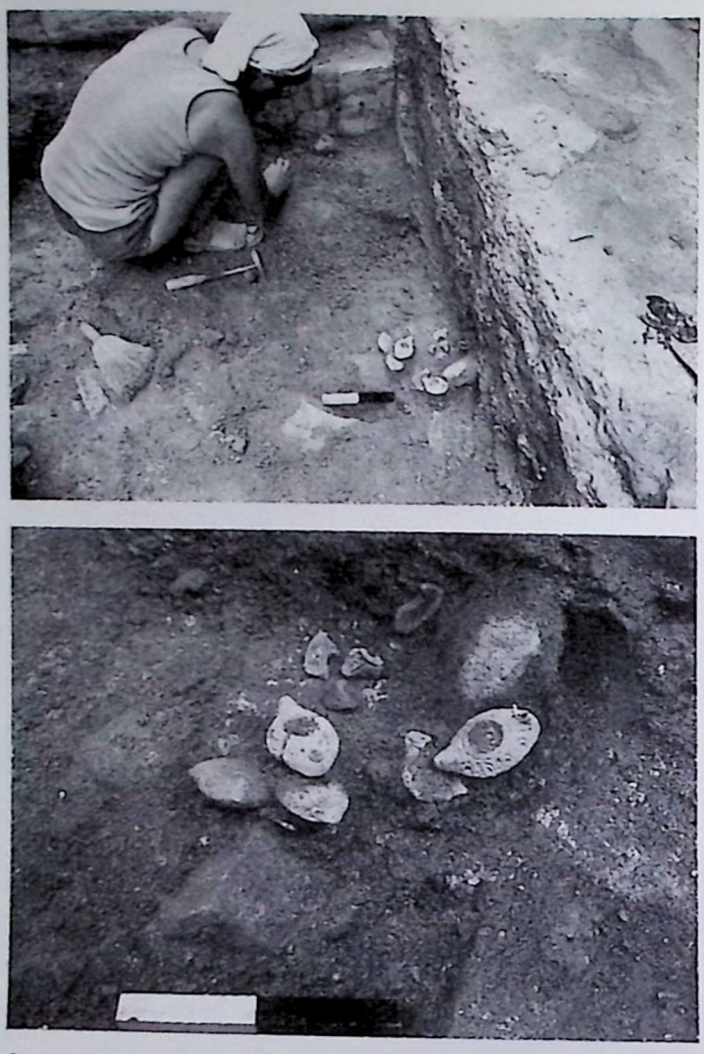


Fig. 191. Clay lamps from the fifth century in the fill of the pool in the western room of Area B.

Area A: The Oval Hall (see above, Fig. 103)

It is difficult to discern distinctly Byzantine remains in Area A. Several changes that can possibly be attributed to the Byzantine period are visible in the walls. In the eastern half of W1 one can see architectural seams on both sides of the entrance connecting Areas A and E. These seams are emphasized by the transition from basalt to limestone. The limestone ashlars are large and dressed similarly to the masonry used in the northern face of the same wall section. As we have seen above, the repair of the northern face of W1 was dated, on the basis of various considerations, to the mid-fifth century, and the repair of its southern face may thus also be attributed to the same stage of construction. A similar change is noted along the southern wall (W2) of the hall: at its center is a long section of limestone construction, in contrast to the other parts that are built of basalt. This may be some sort of late repair, but, on the other hand, this part of W2 could reflect a specific construction method.

The four bathtubs in the semicircular corner alcoves were filled during Phase II. This is evident from the marble floors found above the two eastern bathtubs (L. 102, 103). In the fill beneath the floor of L. 102 we found five coins from the Byzantine period, indicating that the floor above it dates to the late Byzantine period or early Arab period. Only a small part of this floor has survived. Its level is -172.99, ca. 0.3 m higher than that of the walkway (-173.27). The floor is made of marble slabs laid parallel to the parapet of this bathtub.

The floor in the northwestern alcove (L. 107) was also found partially preserved. The level of the floor (-172.97) is ca. 0.25 m higher than that of the walkway. Here too the paving stones were meticulously laid. Beneath them voussoirs made of porous chalky (tufa) material were found. We may thus link the laying of the floor with the destruction caused by the earthquake.

Area G: The Hot Spring Hall
(see above, Fig. 122)

Fairly numerous remains that can be attributed to the Byzantine period were found in Area G. Most outstanding is the oval pool to the east of the spring (Fig. 192). It is similar in size to the earlier rectangular pool, measuring 27.5 m in length and 13 m in width. The four steps flanking it are completely preserved; each of them is 0.3 m high and has an average width of 0.35 m. The bases of



Fig. 192. Oval pool in Area G, looking southwest.

five fountains that supplied cold water to the pool during both phases of occupation are preserved at the edge of the top step. The fountains themselves were discovered in the layers of alluvium that filled the pool. The walkway continued to be used with no notable changes.

The perimeter of the oval pool's floor is built of large slabs of bituminous stone (0.45×0.9 m); its center features square tiles (0.26×0.26 m) laid diagonally. A row of particularly large slabs (0.5×1.05 m) was laid across the middle of the pool, and the slab in its center contained inscription no. 57, which, on the basis of its contents and calligraphy, has been dated to the mid-fifth century (see Chapter 3). This dedicatory inscription was apparently laid when the new pool was completed. Next to this inscription was another one (no. 58) that was engraved when the pool was already in use. The symbol of the cross carved below it reflects the faith of those mentioned.

A ledge, 1.6 m long and 0.5 m wide, was found 0.2 m above the western end of the oval pool's floor. We are of the opinion that this ledge was intended to protect the floor from the flow of spring water entering the pool.

The elevating pool also underwent a significant change that may be attributed to Phase II. Apparently as a result of the earthquake, the original rectangular pool was destroyed and replaced by a much smaller round elevating pool built next to the wall (W11) delimiting the spring on the west. The remaining part of the earlier pool was filled and covered by a floor, only the bedding of which has been partly preserved (mainly as debris at the bottom of the spring).

This pool is well preserved. Its diameter is 4.7 m and its walls are 0.3 m thick. The walls stand atop three courses of solid foundations. We may conjecture that the upper level of the foundations (-173.18) was identical to that of the pavement covering the area north of the pool.

A rectangular bathtub with four floors from various construction stages was discovered to the north of the round elevating pool (Fig. 193). The earliest floor (L. 725) probably belonged to the Roman period. Forty centimeters above it was another floor, only a small section of which was exposed at the western edge of the tub (L. 724). Above it, at a level of -172.54, the floor of the third stage was revealed (Fig. 194). This floor, which is well preserved, is composed of large, well-dressed slabs of bituminous stone measuring ca. 0.5×1 m. In the center of the floor, 0.5-m-wide slabs in secondary use were incorporated. The parapet (W55) of the bathtub is built of small- and medium-sized fieldstones bonded with grayish mortar. The width of the parapet's foundations is 1.3 m. On top of the foundation is a brick wall 0.7 m wide and preserved to a height of 0.75 m. At a later phase of occupation, the uppermost floor was laid, and a stone bench was built along its sides (see below).

Area D: The Hall of Fountains
(see above, Fig. 135)

The main renovation in Area D that may be attributed to the Byzantine period was the filling of the bathtubs in the rectangular alcoves flanking the hall and their repaving at the level of the walkway. The bathtub in the southwestern alcove (L. 423) was filled and a marble floor was laid on top of it; it was later covered by cornice stones in secondary use (Fig. 195). The level of the marble floor is identical to that of the walkway (-172.76). The floor bedding consists of whitish clay, 0.1 m thick, and below it are two layers of fill: a 0.6-m-thick layer of earth and clusters of stones, and, beneath it, a more compressed layer of fill (0.4 m thick) composed of pebbles. At the bottom of the fill, on the floor of the original bathtub, a biconic lamp was found. This lamp and other artifacts date the filling of the bathtub and the laying of the floor above it to the fifth century C.E.

The bathtub in the adjacent alcove (L. 420) was also filled and repaved. The floor, at the level of the walkway, was made of large limestone slabs (0.6×1.3 m). Excavation beneath the floor revealed a lead pipe *in situ*, identical to those found in other parts of the building – 7 cm in diameter and welded on its top side. This pipe is 2.5 m long and extends toward the northeastern alcove of the neighboring hall (Area A) (Fig. 196). It probably conveyed cold water from the main pipe running beneath the eastern walkway of Area D to the northeastern bathtub in Area A.

The lead pipe lying beneath the Byzantine floor

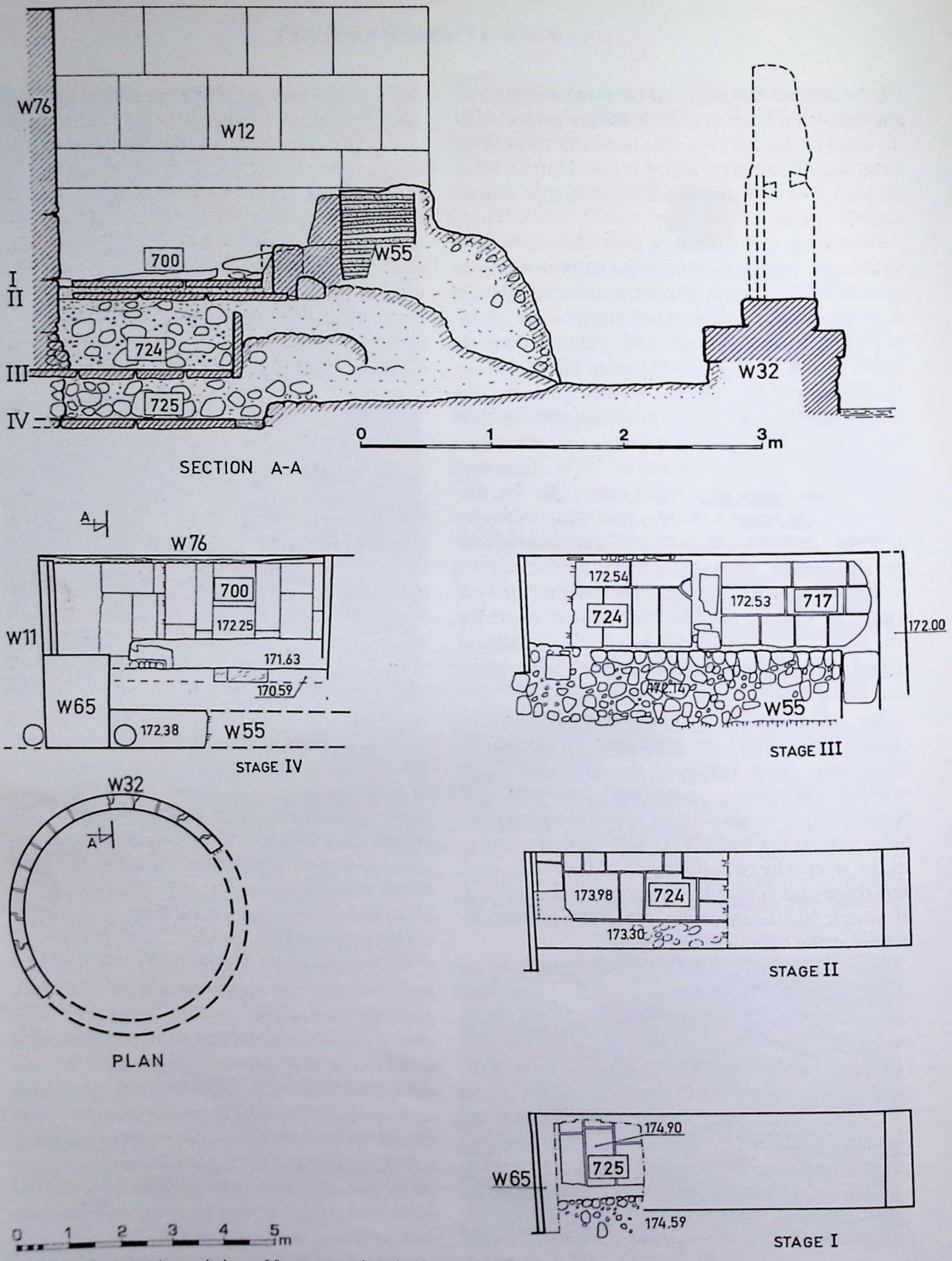


Fig. 193. Cross section and plans of four occupation phases (L. 700, 724, 725) of the bathtub north of the elevating pool.



Fig. 194. Floor of the bathtub north of the elevating pool in its last phase (L. 700), looking northeast.



Fig. 195. Southwestern alcove in W13 with late stone floor and benches, looking west.

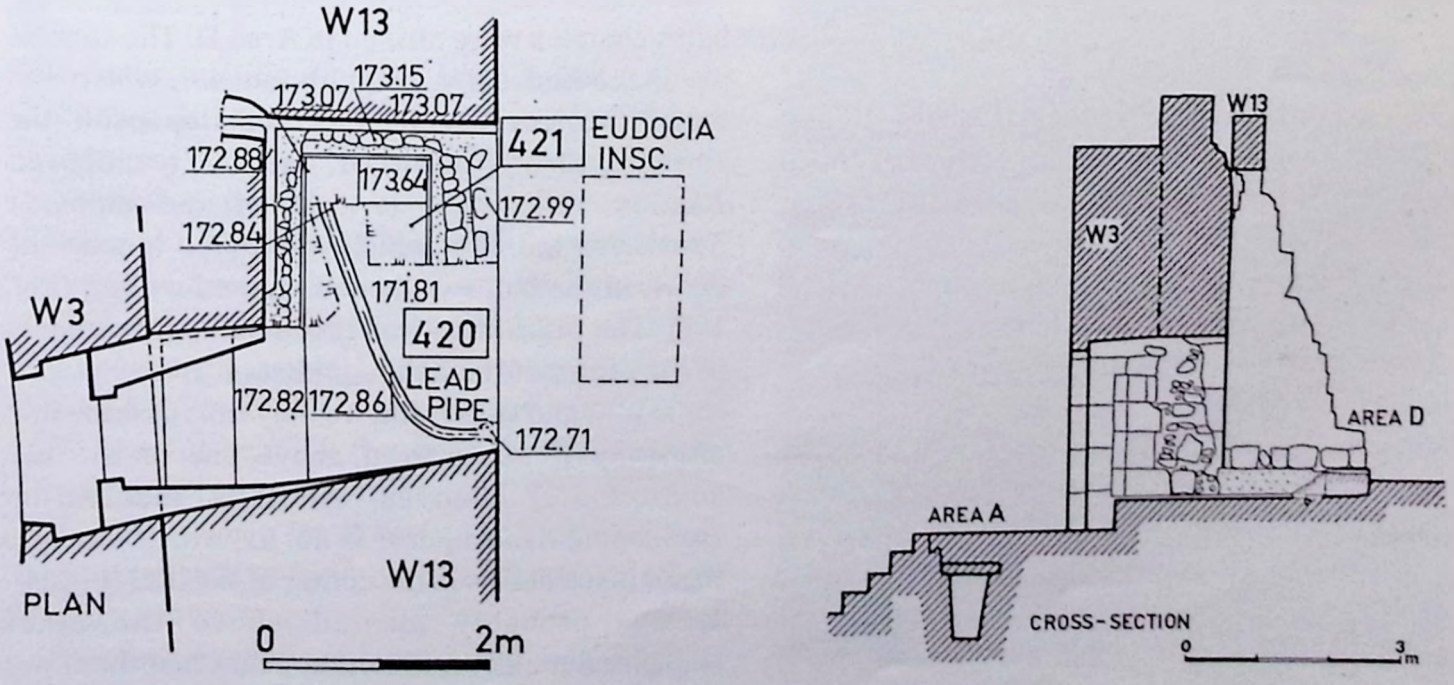


Fig. 196. Plan and cross section of the passage alcove in W13 leading from Area D to Area A.

passes through the bathtub and is thus contemporaneous with the floor. Later on, at the end of the Byzantine period or in the early Arab period, the pipe went out of use since the bathtub in the alcove in Area A was no longer used (see below).

The elimination of this bathtub and the laying of the floor above it made possible free passage between Areas A and D. Apparently this is the reason why the Eudocia inscription was placed opposite this alcove (see Chapter 3, no. 49). The inscription was found *in situ* facing it (Fig. 197). The dating of the inscription – mid-fifth century – corresponds to the filling of the bathtub, the laying of the lead pipe, the paving of the alcove, and the affixing of the Eudocia inscription.



Fig. 197. Eudocia inscription (no. 49) found *in situ*, looking east.

In the northernmost rectangular alcove (L. 435) of W100 an *opus sectile* floor is preserved which we may attribute to Phase II (Fig. 198). This floor is made of square marble tiles (0.17×0.17 m) in two shades, light and dark, arranged in a diagonal checkerboard pattern. As we have seen above, this pattern appears in Areas C and G and characterizes the floors of Phase II. Around the diagonal pattern, rectangular paving stones (0.2×0.3 m) were laid to form its frame. Remains of a similar floor were found in the opposite alcove (L. 439).

The floor with the diagonal pattern was found only in the northern alcoves. In contrast, the southern alcoves in this hall have simple plaster floors (it is possible that the marble stones of Phase

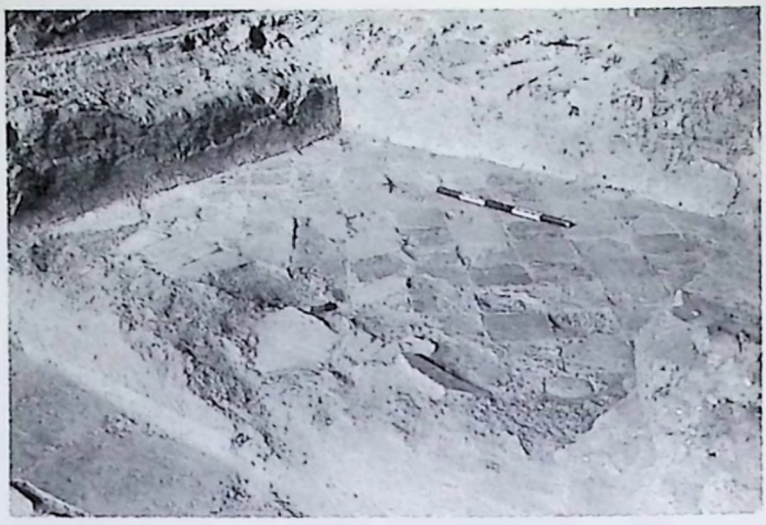


Fig. 198. Tiled floor in the northernmost rectangular alcove (L. 435) in W100, looking northeast.

II were removed at a later phase of occupation). The floor of the semicircular alcove in W100, ca. 0.2 m higher than the walkway, was made of plaster.

The engaged basalt pilasters, built to support the vault above the southern wing of Area D, may be associated with the additions and changes made in Phase II. These pilasters, which measure 0.8×2.5 m, were meant to support and reinforce the barrel vault of the southern wing. The eastern pilaster partially blocks the entrance of the passageway from Area D to Area J, and thus it is late. The attribution of the pilasters to the Byzantine period is purely conjectural, being based on the relatively good quality of their construction.

Several of the most important inscriptions in the baths complex were affixed in Area D. The earliest one is the Eudocia inscription (no. 49), which was found incorporated in the floor opposite the entrance linking Areas A and D (see above). Another inscription is that of the emperor Anastasius (no. 50), which was found among the debris of the hall's walls and vaulted ceiling (Fig. 199). The inscription was revealed approximately in the center of the hall, equidistant from the long walls W13 and W100, and we may thus assume that originally it was affixed above one of the two semicircular alcoves. Another inscription mentioning this emperor is no. 51, which was also found in the debris in the center of the hall (L. 424). It was probably located above the other semicircular alcove; thus, it appears that these two inscriptions were affixed opposite one another.



Fig. 199. Anastasius inscription (no. 50) found among the stone debris of elements of the superstructures in the center of Area D, looking north.



Fig. 200. Alexandros inscription (no. 53) found where it fell at the base of W13, looking northwest.

Another Byzantine inscription in Area D is no. 53, found lying on the floor of the hall (Fig. 200). It mentions the name of Alexandros, procurator (archon) of the province. It was next to the line of contact between the floor and the western long wall (W13) of the hall, between the two northern alcoves. Originally it was probably affixed in the upper part of the wall. The discovery of these inscriptions indicates the importance of Area D throughout the existence of the baths complex. (As we shall see below, in the Umayyad period the Mu'awiya inscription was affixed here.)

Area J (see above, Fig. 163)

The main modification in Area J that may be attributed to the Byzantine period was the filling of the original pool in L. 900, which was then covered by a massive stone floor made of well-smoothened basalt slabs, measuring between 0.4×0.4 m and 0.4×0.53 m and having a uniform thickness of 0.2 m (Fig. 201). The floor level (-172.32) is ca. 1.15 m higher than the original floor. A row of limestone slabs 0.4 m wide was placed in the center of the floor. The fill beneath the floor (L. 904) contains masonry, parts of rooftiles, and clay pipes. It appears that when the floor was laid use was made of debris resulting from the destruction of parts of the building.

The blocking of the four entrances in W73 linking Area J and the southern wing of Area D with dressed ashlars in secondary use may be associated with the late floor. These entrances were blocked on both sides, while the space in the middle was filled with a mass of fieldstones and broken



Fig. 201. Late basalt floor (L. 900) in Area J, looking north.

rooftiles and pipes, similar to the material used for the fill beneath the pool floor.

In the corridor (L. 902) linking Areas J and D and in the courtyard north of it (L. 903) no changes were made that may be attributed to the Byzantine period.

Area F: The Service Area (see above, Fig. 169)

Area F, which originally served as an open service area, underwent far-reaching changes in the Byzantine period. It was bisected by a long wall (W37) built parallel to the "Wall of Windows" at a distance of 4.1 m from it. It is preserved to a height of 2.1 m; it is 1.2 m wide and was exposed for a length of 23.5 m (Fig. 202). This wall actually served as a retaining wall, since its western side, of which only two courses are preserved, supported the fill between it and W29, which runs parallel to it on the west. Next to W37, in L. 614, we found bowls and a cylindrical cooking pot, both of which date to the third-fifth centuries C.E. (Chapter 8); these finds lend support to our claim that W37 dates from the site's Byzantine building phase.



Fig. 202. Late wall (W37) bisecting Area F (service area), looking northwest.

The space between W37 and the "Wall of Windows" contained two bathtubs (Fig. 203). On the south it is delimited by W36, which is preserved to a height of 1.8 m (Fig. 204), is 0.6 m wide and is

◀ Fig. 203. Detailed plan of the late remains in Area F (service area).



Fig. 204. Late wall (W36) built perpendicular to the western facade of the baths complex, looking south.



Fig. 205. Rectangular bathtub (L. 633) and a section of stones covering the large drainage channel, at the base of the western facade of the baths complex, looking east.

built of well-dressed basalt ashlars, some of them in secondary use (the height of the courses is 0.3 m). A rectangular stone (0.6×1.1 m) was incorporated at the top of the wall; it was originally part of some sort of installation, perhaps an oil press, since a semicircular groove (diameter: 0.6 m) is carved in it, on either side of which are two carved holes.

Patches of plaster and mosaics belonging to the floor were preserved in several places. A section of a reddish plaster floor was discovered next to the northernmost of the three windows in Area A. The floor level (-173.19) is ca. 0.2 m higher than the stone beams covering the large drainage channel next to W4. Another part of the same floor is preserved in the corner formed by W36 and W37. The level of the floor (-173.16), which is composed of pinkish plaster, is identical to that at the eastern end of the locus. Beneath the plaster floor we exposed a bedding made of pebbles.

Additional remnants of the same floor were discovered further to the north in Area F. A section of a plain white mosaic floor (0.3×0.5 m) was revealed next to W37, resting on a white foundation 0.15 m thick. Its level (-173.19) corresponds to that of the plaster floor to its south.

Another section of a mosaic floor (0.2×0.2 m) was found in L. 622, next to W71 and W58. It is identical to the one described above, and its level is also similar (-173.22). Remains of the floor's bedding, which is composed of white clay and pebbles, were found throughout Area F.

Two bathtubs were found in the center of the area delimited by W36 and W37. The southern tub (L. 633) is smaller, having internal dimensions of 1×1.5 m and 0.35-m-thick walls (Fig. 205). Its depth at the time of excavation was 0.5 m, but the walls were originally probably higher.

The completely preserved northern bathtub (L. 607), measuring 1.8×2.7 m and 0.8 m deep, is apse-shaped (Fig. 206). It is located next to W37, and its semicircular side faces north. It has a white mosaic floor identical to the one described above. Its walls are 0.5 m thick and constructed of white plaster. Along the southern and eastern walls are benches (width 0.2 m) clad with marble slabs in secondary use. A marble slab decorated with geometric patterns in low relief is incorporated into one of



Fig. 206. Apsidal bathtub (L. 607) and behind it the remains of W37, looking northwest.

them. The finds in this bathtub include small coins from the Byzantine period.

In addition to these two bathtubs, two small ones (L. 616 and 618) were found in a pair of identical alcoves on the eastern side of W37. These tubs, which measure 1.25×1.25 m and have a depth of ca. 0.8 m, were incorporated in the floors of the alcoves. A 0.5-m-wide parapet, which was part of the bench along W37 (see below), was built in front of the tubs. Both tubs were drained via the same channel to the large drainage channel running along the "Wall of Windows." The finds in these bathtubs were relatively rich. Both contained coins from the Byzantine period, but the ceramic finds include wares dating to the Byzantine and Umayyad periods. We may thus conclude that the bathtubs were in use until the end of the existence of the entire baths complex.

South of the pair of alcoves, a 0.5-m-wide engaged pilaster was built, protruding ca. 0.35 m from W37. From the pilaster the above-mentioned stone bench stretched northward up to L. 619. The bench is 0.5 m wide and preserved to a height of 0.2 m above the mosaic floor. Its original height was probably greater.

Next to the northern end of W37, a well-preserved staircase (L. 619) was exposed (Fig. 207). The steps – seven in number – connect two entrances 3.85 m apart and having a height difference of 1.15 m. The width of the steps is 1.15 m and the height of each is 0.15 m.

The lower entrance is well preserved. The width of the opening is 1.1 m, and it has protruding doorposts, preserved to a height of 1.5 m, for the installation of doors.

The area above the staircase is not preserved, and we therefore do not know whither the steps led. East of the staircase, a rectangular room (L. 622) measuring 2.5×3.5 m was discovered. The 1.05-m-wide entrance to this room was in the middle of its southern wall (W66), which is preserved to a height of 0.7 m. The original approach to this entrance was from the south; later on, a small square room (L. 606) was built in front of it (see below). The floor of the rectangular room, at a level of -173.13, was made of a light pink plaster. The function of both these rooms is not clear.

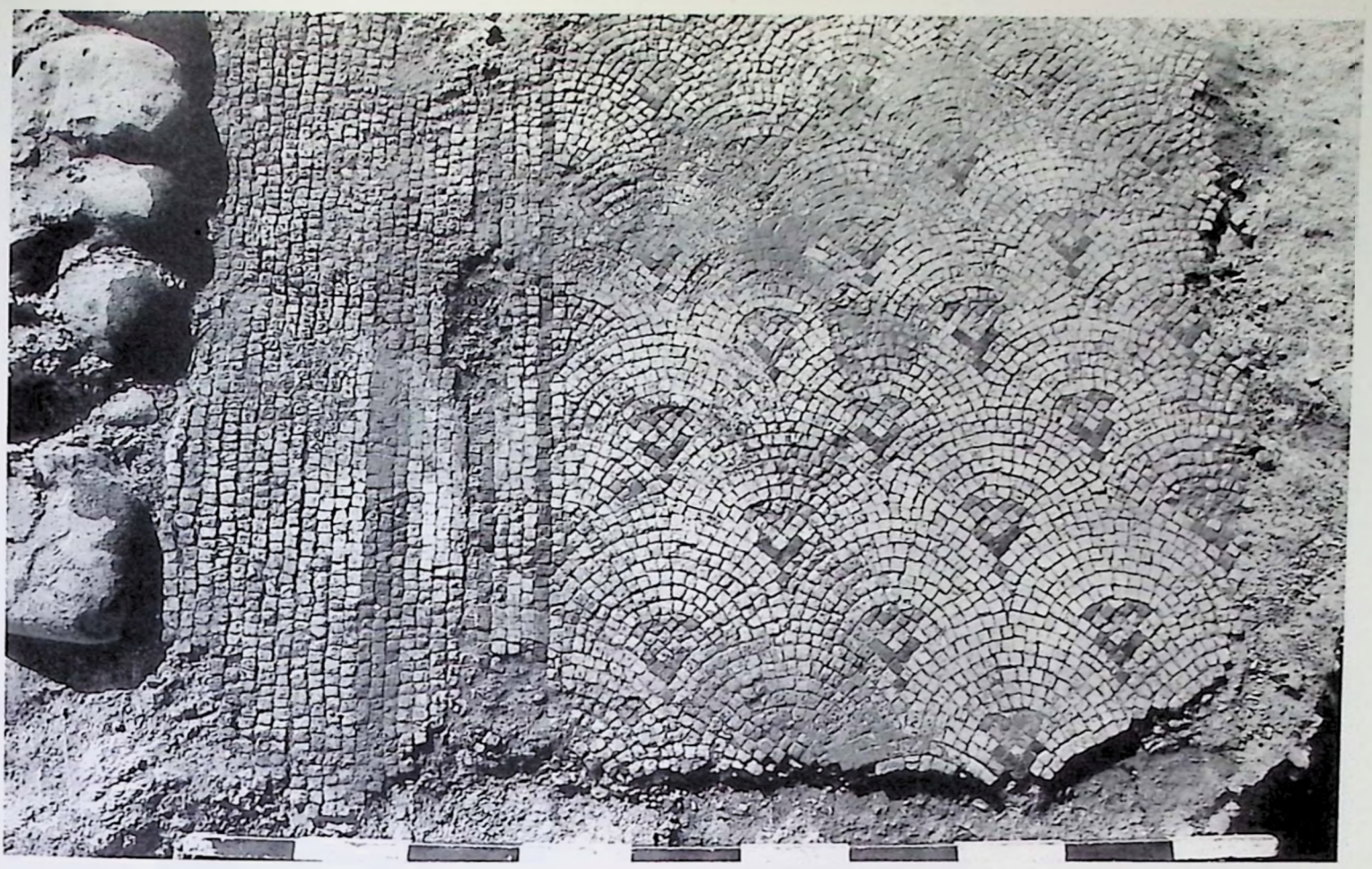
In the area west of W29, the remains of dwellings from the Byzantine period were exposed. The walls of these houses are very poorly preserved, but, in contrast, a mosaic floor (L. 628) between two walls (W105 and W113) running in a general north-south



Fig. 207. Staircase and rooms built next to the western facade of the baths complex, looking north.



Fig. 208. Mosaic floor (L. 628) between the houses west of W29, looking south.



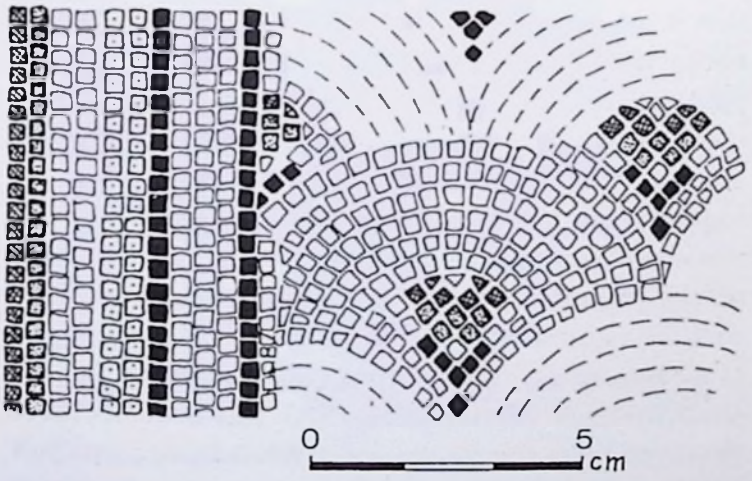


Fig. 209. Detail of the mosaic floor of L. 628.

direction has survived (Fig. 208). These walls are 1.6 m apart. The mosaic features four colors: red, black, and yellow on a white background. Its center is decorated with a scale pattern, within which are rows of flower buds facing south (Fig. 209). This pattern is characteristic of many mosaic floors throughout the country.

Only the foundations of the walls bounding the mosaic have been preserved. They are 0.65 m thick and are built of small- and medium-sized fieldstones. According to the small finds, the mosaic floor and the adjacent walls may be attributed to the Byzantine period.

In the area (L. 629) to the east of the mosaic we found a floor surface of whitish plaster which abuts on top of the walls' foundations on both sides of the locus – W105 on the west and W29 on the east (Fig. 210). This floor most probably also dates to the Byzantine period. Beneath it the remains of a baking oven were found in the bedding of the floor. The diameter of the oven is 1 m and its sides are preserved to a height of 0.7 m. Next to it, below the floor level, were three coins from the Byzantine period; we may thus conclude that this floor does not predate this period.



Fig. 210. Occupation phases next to the western face of W29, looking northeast.

PHASE III: THE UMAYYAD PERIOD (UNTIL 749 C.E.)

The Umayyad period at Hammat Gader is characterized by a systematic blocking of passages and narrowing of architectural spaces. The Umayyad remains are relatively easily identifiable as the latest stage of construction prior to the complete destruction of the baths complex in 749. Debris of the superstructures and deposits of alluvium covered the building, making its use virtually impossible without relevelling and rebuilding. This state of affairs characterized the last phase of the building's occupation in the period preceding the great earthquake, i.e., the Umayyad period.

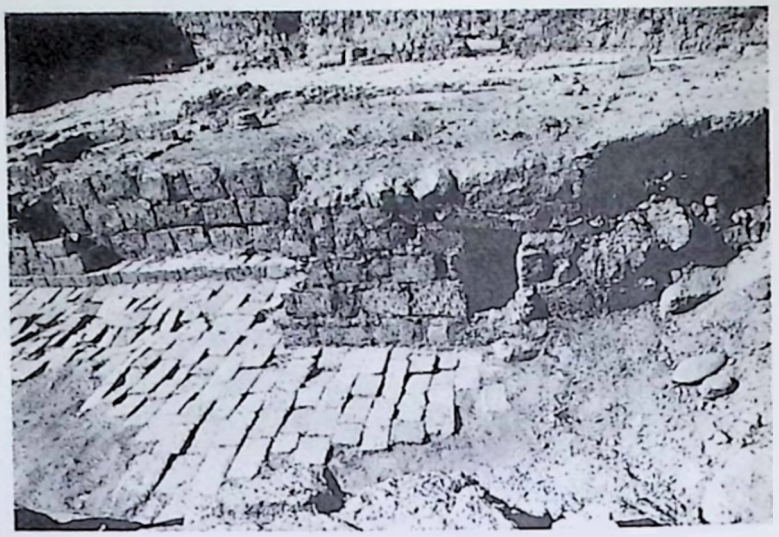


Fig. 211. Channel opening (L. 810) in a late building on top of the stone floor of Area H, looking north.

Area H: The Entrance Corridor (see above, Fig. 52)

The street north of the baths complex continued to be used, apparently without interruption, until the end of the Umayyad period. In contrast, new structures were added to the entrance corridor (L. 803). Along the northern wall (W90) a structure roughly built of masonry in secondary use was erected (Fig. 211). The long wall (W120) of this structure, preserved to a height of 1.7 m, was exposed. The length of the exposed section is 13.5 m, but it is clear that the wall was originally much longer (Fig. 212). The western end of the wall is fragmentary while its eastern is located beneath the debris in the area which has not yet been excavated. The wall is at a slight angle to W90: the distance between them is 3 m at the western end of W120, increasing to 3.6 m toward the east.

At a distance of 2.5 m from the western end of the wall is the opening of a diagonal channel (L. 810), 0.67 m wide and 1.8 m high. This channel extends to the northwest but its destination and function are not clear.

At a distance of 6.5 m east of this channel, the opening of another channel running in the opposite direction, from northeast to southwest, was discovered. A section of the latter channel, 2.7 m long, 1 m wide, and 1.3 m high, is preserved; its roofing is corbelled. It appears that these two channels led to the pool in Area D (see below).

W120 and the walls perpendicular to it (W119, W118) eliminated the use of the eastern entranceway in W90. The inferior quality of the walls of the above-mentioned structure indicates that it was erected in the last building stage of the baths complex (Phase III). In this period, the passages linking Area H with Areas C and E were blocked (see below), and only the passage in W80 leading into Area D remained open. This is an indication of the changes made in the movement of the visitors to the site during this period. The finds on the pavement of the entrance corridor (L. 803) included coins and various artifacts dating to the late Byzantine and Umayyad periods. In the southwestern corner of L. 803 the marble faces removed from the fountains in Area D (see Chapter 12) were found. It appears that they were kept on a shelf of some kind at the western end of W80. We assume that this shelf collapsed in the earthquake of 749.

Area C: The Hall of Piers (see above, Fig. 178)

The main alterations in Area C that may be attributed to Phase III were discovered in the area (L. 302) north of the columned portal. This area was reduced on the north by a wall (W27) which we termed the "Wall of Shops," the side passageways leading to it were blocked by W28 on the east and W17 on the west, and a new stone floor was laid on top of the original floor. Thus, north of the pair of columns a rectangular area measuring 4.7×11.4 m

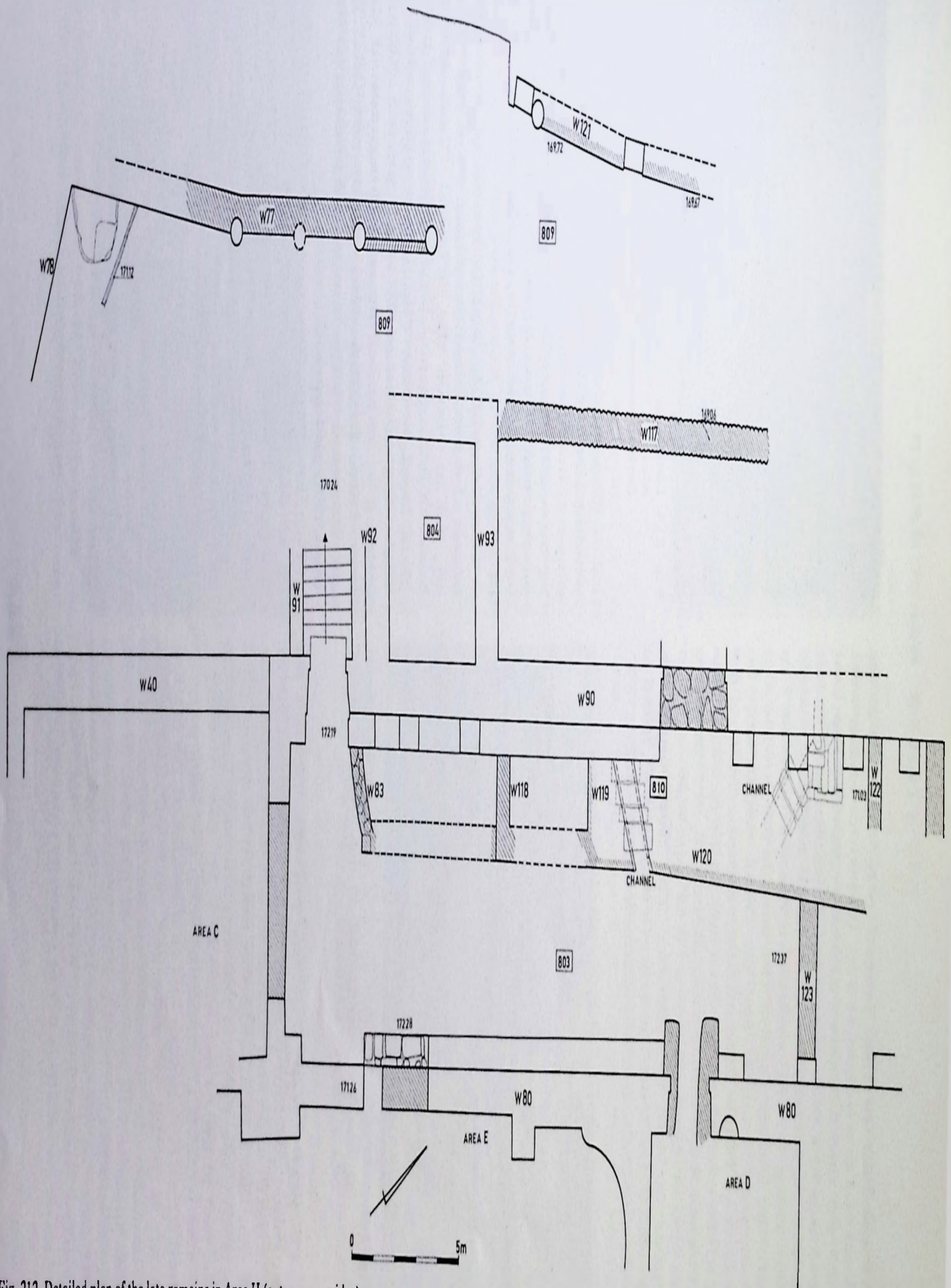


Fig. 212. Detailed plan of the late remains in Area H (entrance corridor).

was created in this period (Fig. 213). W27 is preserved to a height of 2 m. It is wider on the west (0.65 m) and becomes narrower toward the east (0.45 m). The wall is built of limestone and basalt ashlars in secondary use. Three entrances were built along it. The western entrance, located 2 m from the western end of the wall, is 0.6 m wide and leads into a small cell (L. 310), which will be described below. The middle entrance, located 6.3 m to the east of the western one, is 0.8 m wide. This entrance leads into the middle cell (L. 311) between the two original pilasters (W42 and W39) at right angles to W40 (see below). The third entrance, located 2.3 m from the eastern end of W27, is 0.6 m wide and leads into the eastern cell (L. 312).



Fig. 213. Late floor (L. 302) north of the columned portal, against the background of the "Wall of Shops" (W27), looking northwest.

The wall (W28) blocking passage through the entrance corridor is preserved to a height of 1.8 m. It is 0.8 m wide and built of stones in secondary use. A window 1.15 m wide was built in its center, ca. 1 m above the floor; it was intentionally blocked in the last phase of occupation.

The wall (W17) opposite W28, blocking passage into Area F, is preserved to a height of 2.3 m (Fig. 214). It is 1.1 m wide and built of masonry in secondary use. A window similar to the one in W28 was installed in the center of this wall. It is well built, and the recess for its shutters is preserved in the sides of the window frame. The opening of the window widens inward, toward the hall's interior: its exterior width is 0.9 m while its interior width is



Fig. 214. Late blocking wall (W17) between the northern pier of W6 and the piers perpendicular to W40, looking west.

1.2 m. The windowsill is 1.1 m above the floor. This window, like the one in W28, was blocked in the final phase of occupation, before the destruction caused by the earthquake of 749. With the blocking of the passageways from Areas H and F, sole access to L. 302 was from the south, i.e., from the southern part of Area C.

The floor of L. 302 is made of limestone and basalt slabs in secondary use. Its level (-172.01) is ca. 0.3 m above the original floor, and the fill beneath it contained large quantities of potsherds, glass, and coins. The latest coins date to the beginning of the early Arab period (Chapter 6), leading us to conclude that this stage of the floor was laid in the Umayyad period. This is corroborated by the lamps and potsherds dating to the Umayyad period.

Two limestone columns were found in the center of L. 302. They are roughly hewn, 0.55 m in diameter, and free-standing. These columns probably helped support the ceiling.

The dimensions of the western cell (L. 310) are 2×3 m, and its floor (at -171.60) is made of white, compressed plaster. In the northwestern corner of this cell, three clay pipes were discovered lying next to one another. The diameter of the pipes is 0.12 m and their length 0.3 m. The bedding below the floor is made up of a 0.15-m-thick layer of crushed chalk, beneath which is a 0.5-m-thick layer of pebbles (Fig. 215).

The middle cell (L. 311), located between the two central pilasters, measures 1.9×3.55 m. Three



Fig. 215. Pebble floor in L. 310, looking west.

intact clay vessels were found embedded in its plaster floor (at a level of -171.48) (Fig. 216). Two of them are casseroles containing a yellowish-white substance, and next to them, at a lower level in the cell's northeastern corner, was an amphora surrounded by three large stones. These vessels, which were popular in the Umayyad period, indicate that the cell functioned as a shop and/or storage room. The 0.4-m-thick bedding beneath the floor is composed of pebbles and building stones in secondary use.

The eastern cell (L. 312) is similar in size (2×3.1 m) to the western one, and its floor consists of a layer of plaster, beneath which was a bed of pebbles similar to the one below the western cell. A lamp dating to the Umayyad period was found beneath the bedding, leading us to conclude that the floor was laid in the last phase of occupation of the baths complex.

Late building activity was also discernible in the area south of the columns. The three passageways between Areas C and E were intentionally blocked. The wall (W16) blocking the northern passageway was preserved to a height of 1.3 m. It was built of variously-sized limestone ashlars in secondary use. The walls blocking the central and southern openings were similarly built and are preserved to a height of 2 m (Fig. 217). It stands to reason, therefore, that the sole access to Area C in this period was from Area B (see below).

Low walls, which most probably served as parapets, were built between the four western piers (W6). The parapet (W34) between the two northern piers is 0.6 m wide and haphazardly built. The other two are similar. All of them were built on the marble floor of the walkway and therefore postdate it.



Fig. 217. Late walls between the piers of W7, looking east.



Fig. 216. Cooking pots sunk into the floor of the middle cell (L. 311) behind W27, looking southeast.

Two stone steps were added to the stairway which served as a base for the columned portal on the south. They were roughly built of stones of different sizes in secondary use. The tread of the upper step is 1.15 m wide and its riser is 0.2 m high, while the tread of the lower step is 0.3 m wide and its riser is 0.2 m high. To this phase we may attribute the crude groove carved on the western side of the western column. This 0.1-m-wide groove housed some sort of lattice screen, remains of which were not found in the excavation. It should be noted that the other column lacked such a groove.

All of the above-mentioned elements were found "buried" beneath the massive debris of the building. The superstructures of the hall's walls and its ceiling collapsed directly onto the floors during the earthquake of 749.

Area E: The Hall of Inscriptions
(see above, Fig. 183)

Here, too, the renovations attributable to Phase III are the blocking of passageways. As noted above, all the spaces between the piers of W7 were blocked intentionally, including the northern one that had served as a passageway, thereby eliminating any possibility of passage from Area C to Area E. The bathtub (L. 513) between the two central piers continued to be used, but behind it, on top of the parapet, a wall (preserved to a height of 2.3 m) was erected (Fig. 218). It is 0.6 m wide and built of ashlars in secondary use. This wall blocked the view between the two areas. The debris that filled the bathtub contained large quantities of artifacts, including coins, potsherds, glass, fragments of glass mosaics, etc.

The space (L. 515) between the two southern piers was blocked by two parallel walls built of ashlars in secondary use. The thickness of these walls is 0.7 m and they are roughly built. In the space between them was a fill and beneath it two basalt architectural elements and a headless marble statue (Fig. 219). One element is a column with a diameter of 0.6 m, and the other is a stone base, 0.93 m long, 0.35 m wide, and 0.7 m high (Fig. 220), apparently part of a pedestal for a statue. The face of the pedestal is plastered and at its top are



Fig. 218. Late blocking wall behind the bathtub (L. 513) between the two central piers of W7, looking southwest.



Fig. 219. Marble statue in the late blockage (W103), view from above.

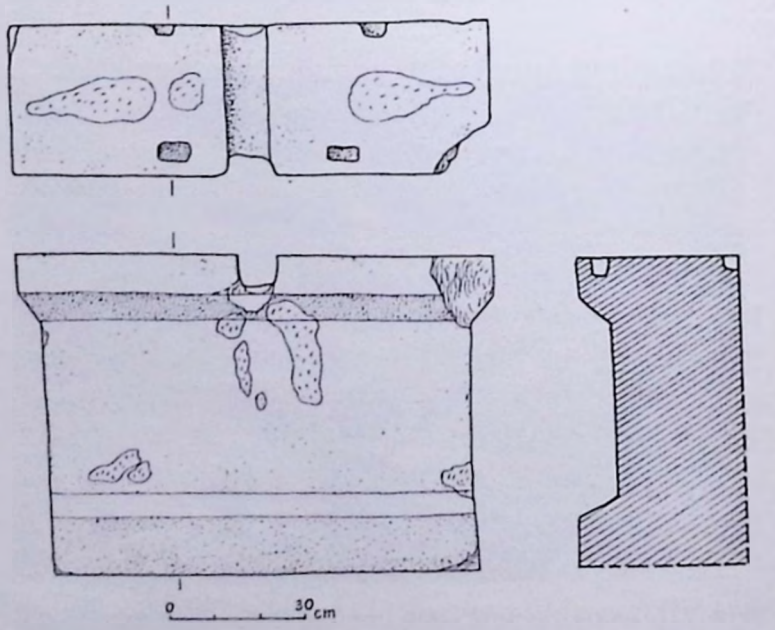


Fig. 220. The pedestal found in W103.

depressions and grooves for securing a statue. The marble statue was hidden intentionally, probably as a safekeeping measure or as part of the iconoclastic activity that characterized Palestine in the first half of the eighth century C.E. The fragments of another marble statue were discovered in a late channel in Area E (see below)..

The blocking of the passageways between the piers of W7 gave rise to a continuous wall, along the full length of which a stone bench was built (Fig. 221). The width of this well-preserved bench is 0.7 m and its height is 0.4 m; its surface is covered with a thick layer of plaster. Behind the bench ran a clay pipe which probably led to the bathtub that was exposed in the western room of Area B (see below).



Fig. 221. Built bench on the marble floor of Area E, parallel and next to the piers of W7, looking west.

The pipe was set in a casing which formed a hump 0.2 m wide and high. The diameter of the pipe is 0.12 m and the length of its segments is 0.3 m, as may be seen in a section that was exposed next to the entrance in W10 leading into Area B (Fig. 222).

The northern part of the bench blocked the passage into Area C (Fig. 223). A clay pipe was discovered beneath the threshold stones of the entrance in W80 leading into Area H (Fig. 224). We may thus conclude that this entrance was still in use when the pipe was installed. The eastward continuation of the pipe from this point was not revealed. The very existence of the pipe is indicative of the effort invested in the Umayyad period to renovate the baths complex's water system.



Fig. 222. Basalt basin and clay pipe running toward the bathtub in Area B, looking northwest.

Two stages relating to the Umayyad period are evident in the northern wall (W80) of Area E. In the first stage, when the bench was built and the clay pipe installed, it appears that the entrance from Area H was still in use. This may be learned from the break in the course of the bench and from the



Fig. 223. Continuation of the stone bench blocking the passageway between Areas E and C, looking west.

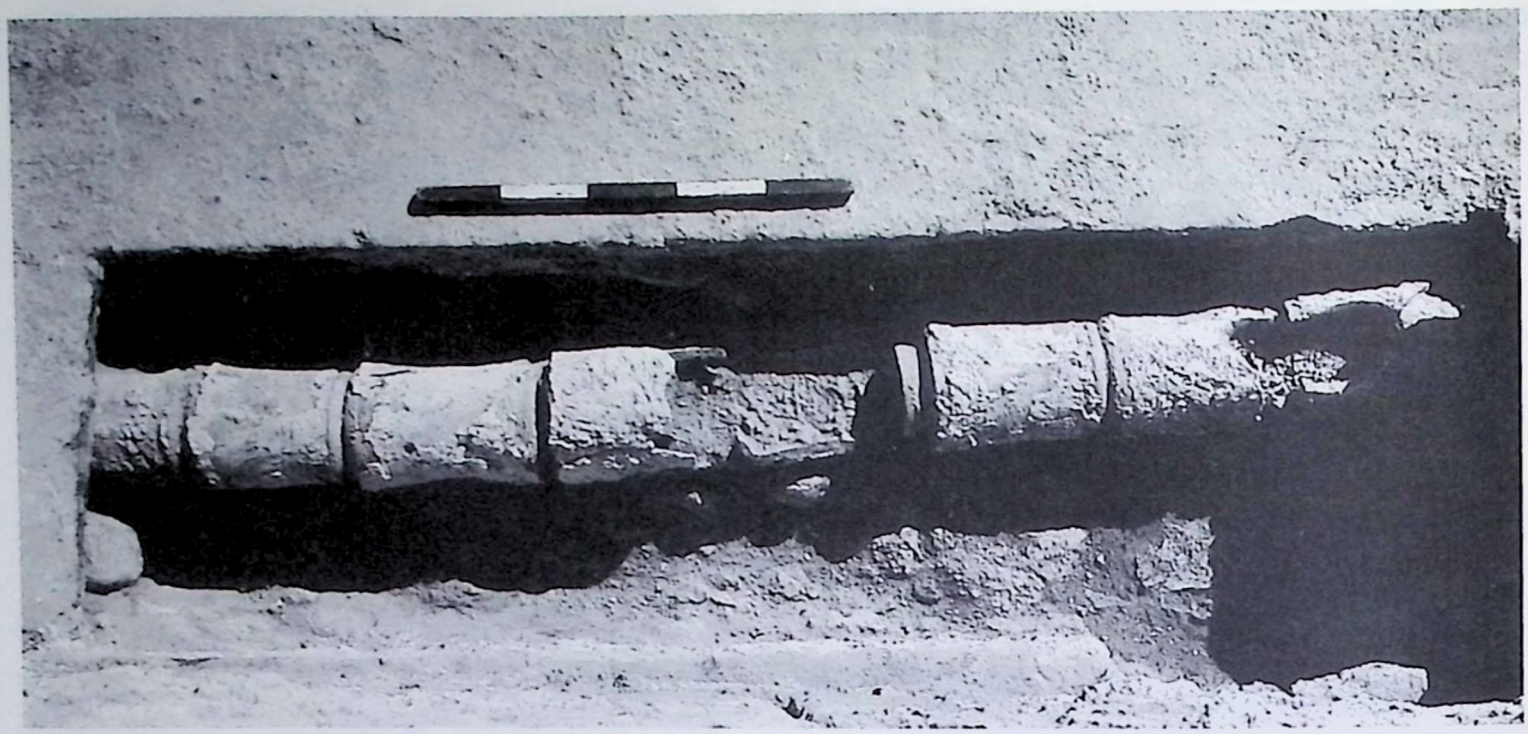


Fig. 224. Continuation of the clay pipe concealed beneath the marble floor in the section opposite the entranceway into Area H.

concealment of the pipe beneath the threshold, as noted above. Later on, the entrance was blocked and above it a narrow opening (0.85 m wide) was breached 1.5 m above the floor level of Area E. A double staircase built adjacent to the southern face of W80 leads to this opening (Fig. 225). The staircase has four steps on each side and is 1.9 m wide, 2.7 m long, and 1.1 m high, i.e., ca. 0.4 m lower than the bottom of the above-mentioned opening. At the top of the steps is a square platform (1.2×1.9 m) opposite the opening. It is not clear whether this opening served as a passageway or a window in this phase, since the level of its bottom (-171.60) is 0.9 m higher than the floor level of Area H north of the wall. Accordingly, one may assume that this opening served as a window; however, if it was indeed a window, it is not clear why a staircase was built on its southern side.

Several repairs attributable to Phase III were made in the Byzantine marble floor of Area E. A section of basalt pavement (measuring 2×2.5 m) was exposed next to the hall's northeastern corner. The slabs, averaging 0.3×0.5 m in size and 0.15 m in thickness, were carefully laid. Another section of repair was revealed in the middle of the hall and was most probably the result of the installation of a late channel beneath the floor.



Fig. 225. Late wall blocking the main entrance (in W80) into Area E, looking east.

A channel (L. 521) running in a northerly direction emerges from a subterranean opening beneath W1 (Fig. 226). It is 0.5 m deep and has an inner width of 0.45 m. The 0.6-m-thick walls of this channel are built of *debesh* composed of small fieldstones and grayish mortar. Roughly-hewn stone beams, measuring 0.3×0.7 m in size and averaging 0.25 m in thickness, covered the channel. The channel was exposed for a length of ca. 18 m, up to the point where it turned 90° eastward. Apparently it led hot water from the spring to a bathing facility, perhaps the pool in the northern apsidal room (L. 508) located northeast of Area D.



Fig. 226. Late channel (L. 521) beneath the floor of Area E, looking south.

During the excavation of the channel, coins and various artifacts dating to the Umayyad period were found, as well as two parts of a marble statue – the pelvis and the chest of a male – located next to one another at the opening of the channel, beneath W1 (Fig. 227). The parts of the statue had

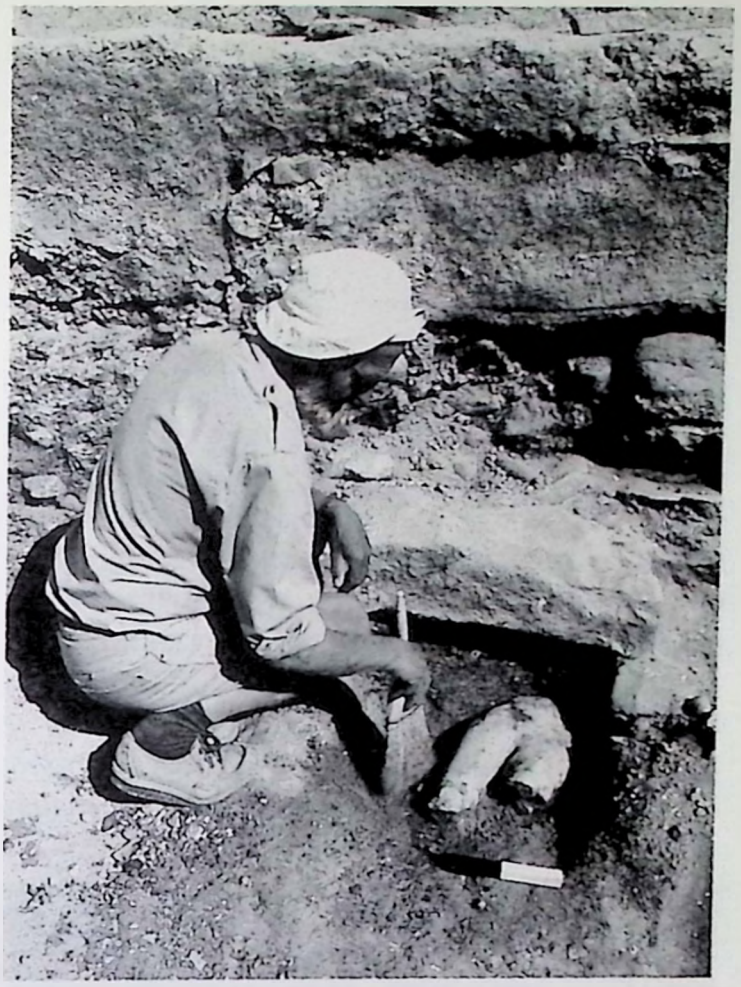


Fig. 227. Parts of a marble statue in the alluvial fill of the channel running from Area A to Area E, looking south.

not been abandoned inside the channel, but were rather intentionally concealed as part of the iconoclastic activity discussed above.

In the southwestern corner of Area E, next to W10 (L. 503), a large basalt basin was exposed. Its outer diameter is 0.72 m, the thickness of its walls is 0.61 m, and its height is 0.6 m. On its interior were radial grooves, indicating its use for some industrial purpose; its walls were stained with a white calcium compound, which may be connected with the process that took place in it.

On the floor next to the basin (L. 503) we discerned limestone and basalt repairs which may be attributed to the Umayyad period. The entrance in W10 connecting Areas E and B was intentionally blocked (see below), as well as the entrance in W1 linking Area E with Area A. It appears that all the passageways leading to and from Area E were blocked, so the sole access to it was from the apsidal rooms (L. 525) connecting Areas E and D.

Another late pavement was found in the southeastern corner of the hall. Laid in an area delimited by the southern part of the basalt bench along W13, this floor was also roughly built of slabs in secondary use (Fig. 228).

Another feature which may be attributed to Phase III is the graffiti on the walls. A crudely-engraved inscription was found on the second pier from the south in the eastern row (W13). Little of it has survived and its contents are undecipherable. On the layer of plaster covering the third pier from the south in the western row (W7) were engravings of crosses of different sizes and between them graffiti in Greek (see Chapter 3, no. 71). Moreover, engravings of games and footprints were discovered on marble slabs of the Byzantine floor (see Chapter 4). We may assume that these inscriptions could have been incised at a time when there was no close supervision over the baths complex – toward the end of the Umayyad period.

Area B: The Passage Rooms
(see above, Fig. 188)

Alterations and repairs belonging to Phase III were discerned in the eastern room of Area B. The late floor, which is attributed to Phase II, is cut by a diagonal channel. On the floor is a bench built of masonry in secondary use and covered with thick layers of plaster (Fig. 229). The bench, which is 0.4 m wide and 0.5 m high, runs along the eastern wall (W10), blocking the entrance leading into Area E. Along the northern part of the bench we found a clay pipe that extends to the bathtub in the western room.

The Byzantine floor of the western room (L. 201) is cut by a lead pipe running in a general northwesterly direction, a 3.2-m-long section of which was exposed (Fig. 230). Its diameter is 9 cm, and along its course the welding point of two segments is visible. This pipe runs toward Area C, as attested by the opening cut for it in W5.



Fig. 228. Late floor in the southern alcove next to W13, looking east.



Fig. 229. Late stone floor and benches in the eastern room (L. 205) of Area B, looking east.

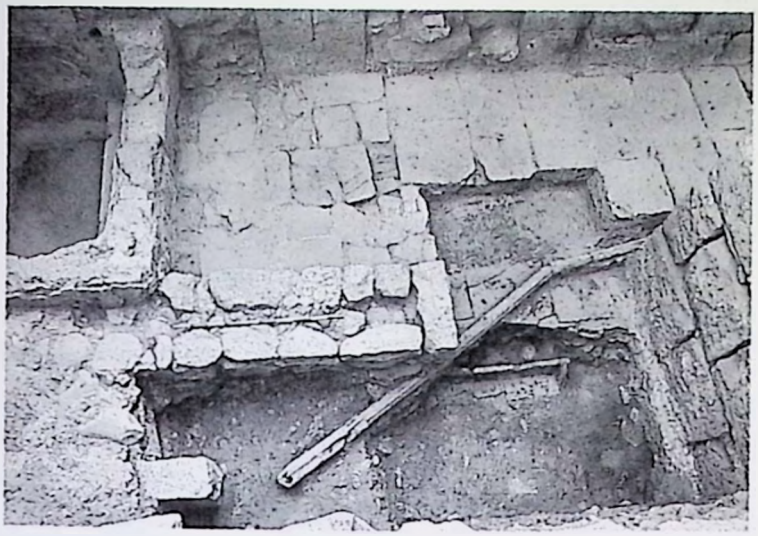


Fig. 230. Lead pipe beneath the late floor of the western room (L. 201) of Area B, looking east.



Fig. 232. Corner bathtub in the western room of Area B.

Two benches were built along the long walls of this room. They are 0.7 m wide and preserved to a height of 0.3 m.

In the northeastern corner of the room, a rectangular bathtub (1.65×2.05 m) that may be attributed to Phase III (Fig. 231) was preserved intact. It was built on the Byzantine floor, and its brick walls, 0.3 m thick and 0.6 m high, are covered inside and out with a thick layer of plaster.



Fig. 231. Corner bathtub in the western room (L. 202) of Area B, looking northeast.

Two benches (0.3 m wide) were built inside the bathtub (Fig. 232). They attain a height of 0.4 m above the floor and their faces are clad with marble slabs in secondary use, as is evident from the geometrical carving preserved on several of them. The depth of the tub is 1.1 m and thus it could have held ca. 2 m^3 of water.

Water was fed into the bathtub via a clay pipe, remains of which were exposed along the western wall of Area E and the northern wall of Area B. The inlet is at the rim of the eastern wall of the bathtub. At the bottom of the tub is a lead pipe forming the outlet; it is 0.3 m wide, 0.45 m deep, and 0.1 m in diameter. This pipe links up with a channel passing beneath the floor of the eastern room (Fig. 233). A variety of artifacts was found in the channel at the time of excavation, including a gold earring, a bronze ring, and potsherds from the Byzantine and Umayyad periods.

It should be noted that all of the entrances in Area B, except for the one leading into Area E, remained open. Thus, Area B continued to be used as a passage area until the end of Phase III. In fact, the only access to Area C was from Area B, since all the other entrances and passageways leading into it were intentionally blocked. During the period under discussion the movement of the public was thus from south to north, i.e., in a direction opposite of that in the earlier periods.

Area A: The Oval Hall

The central pool of Area A remained in use and underwent no changes until the destruction of 749. Among the building operations that can be attributed to Phase III are the filling of the side bathtubs and the laying of new floors above them.



Fig. 233. Drainage channel cutting the late floor in the eastern room (L. 213) of Area B, looking west.

Additional building activity which may be attributed to the Umayyad period is the blocking of the entrance connecting Areas A and E with large ashlars (0.5×0.9 m) in secondary use. As we shall see below, the entrance linking Areas A and D was apparently narrowed in this phase. In contrast, the entrance leading from Area A to Area G remained untouched, with no visible changes.

Area G: The Hot Spring Hall
(see above, Fig. 122)

In the oval pool of Area G, we discovered a 1.5-m-thick layer of alluvium resulting from flooding directly preceding the destruction in the year 749. (The remains of the ceiling vault were found directly above the alluvium.) It thus appears that the pool was in continuous use until the end of the Umayyad period. Next to the pool, above the southern walkway, a conduit (L. 705) ran from the spring toward Area D. This conduit, having an interior width of 0.32 m, is well preserved; its walls are made of uniform basalt slabs (0.43×0.85 m) measuring 0.17 m in thickness (Fig. 234), and its floor consists of horizontal basalt slabs. This



Fig. 234. Late conduit (L. 705) above the southern walkway of the oval pool in Area G, looking east.

conduit differs in its method of construction from all the other subterranean channels in the baths complex. The level of its bottom is -172.58, 1.4 m higher than the floor of the pool; thus, there was a need to raise the water level of the spring to this height.

Since the presence of the conduit ruled out the possibility of using the southern walkway, we may thus conclude that it postdates the pool's Byzantine period. Moreover, the conduit blocks the passageway in W54 leading from the oval pool in the northern part of Area G to the round pool on the south.

Area D: The Hall of Fountains
(see above, Fig. 135)

The use of Area D continued almost uninterrupted in the Umayyad period. The continuation of the conduit that began in Area G was exposed at the southern end of the hall. The blocking of the opening through which it passed from Area G to Area D was carried out at a stage when the conduit already existed and thus should be dated to Phase III. Remains of the conduit were exposed at the base of the eastern wall (W73) of the southern wing. Here it is 0.45 m wide, 0.3 m above the floor, and made of rubble and mortar; its inner width is 0.2 m and its walls are 0.25 m thick. The conduit runs in front of the entrances in W73 that were blocked prior to its construction, through the northern entrance in that wall, into the corridor of Area J (see below).

At the southern end of the southern wing (L. 406), a raised stone floor that can be attributed to Phase III was exposed. Its level (-172.15) is ca. 0.6 m higher than that of the original floor. Only a small part of this floor adjacent to W85, composed of paving slabs in secondary use, was preserved. The finds between the two floors date the later one to the Umayyad period. We may conclude that it was laid when the above-mentioned conduit was built and that, at the same time, both entrances in the hall's southern wall (W85) were blocked, in conformity with the general trend of Umayyad building activity. Between the southern end of the floor and W85, a roughly built stone bench was added in this phase. It is 0.7 m wide and preserved to a height of 0.3 m.

In front of the alcove in the western wall (W50) of the wing, a low wall 0.35 m high and 0.3 m wide was built.

As noted, the central pool of Area D was used continuously until the end of Phase III. In contrast, floors that may be attributed to the Umayyad period were laid in the two southern rectangular alcoves in the hall's western wall (W13). The late floor in the southernmost alcove (L. 423) is made of basalt slabs in secondary use. Its level (-172.54) is ca. 0.2 m higher than that of the walkway. Six basalt stones were laid along its outer edges. These stones are well dressed and measure 0.48×0.56×0.35 m (Fig. 235). On the late floor, next to the walls of the alcove, is a crudely built bench (0.5 m wide, 0.4 m high).

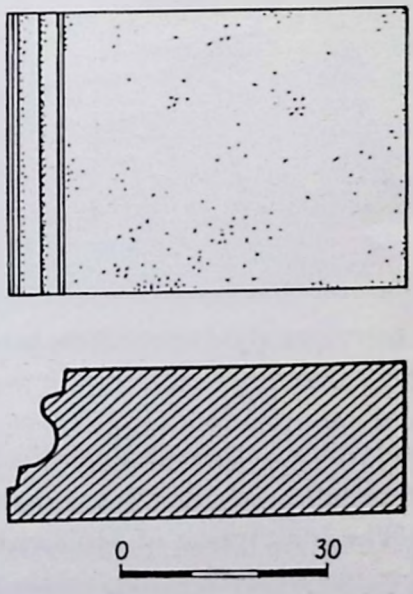


Fig. 235. Plan and cross section of one of the paving stones on top of the bathtub in the southwestern alcove of W13.

A late floor, also 0.2 m higher than the walkway, was found in the adjacent alcove (L. 421). It is made of integrated sections of plaster and stone; the stone slabs are in secondary use while the plaster is whitish and contains a large amount of small pebbles. Here, too, the stone bench (0.5 m wide and preserved to a height of 0.4 m) was crudely built.

The width of the entrance leading from Area D to Area A was reduced by 0.75 m. Four courses of its doorposts, each 0.4 m high, are preserved in situ (Fig. 236). The width of the entrance in W14 connecting Areas G and D was also reduced.



Fig. 236. Late narrowing of the entranceway between Areas D and A, looking west.

Additional remains attributable to the Umayyad period are repairs in the floors and various engravings. The inscription of Mu'awiya (no. 54) was affixed in the western semicircular alcove (L. 419) in the early Umayyad period and dates to 662 C.E. It was found in situ, in a depression in the wall. The depression is located 2 m above the floor and measures 40×70×4-5 cm (Fig. 237). Many repairs were made in the floor of the alcove, and several slabs bear inscriptions and graffiti from the end of the building's use (see Chapter 4).

In the northern wing of the central pool, the floor was repaired with basalt stones contrasting with the limestone slabs covering the rest of the floor. The basalt stones are smoothened, measuring 0.4×0.7 m and ca. 0.2 m in thickness. It is impossible to determine whether this basalt repair dates from the end of the Byzantine period or the beginning of the Umayyad period.

At the northern end (L. 442) of the hall's northern wing, a channel was found leading to the central pool. It is roughly made, narrow at its northern end (0.3 m) and widening to 0.8 m at its southern end where it enters the pool. Its walls are 0.25 m high. The channel runs from the direction of the late channels found in Area H; it probably conveyed water from one of the cool springs issuing from the northern areas of Hammat Gader.

Area J (see above, Fig. 163)

The only modifications in Area J which may be attributed to the Umayyad period are the blocking of entrances. Four of the five entrances in W73 were blocked with ashlars in secondary use and covered with a thick layer of plaster on both sides, indicating that this building operation was intentional (see above). The entrance in W115, which had connected the corridor (L. 902) with the

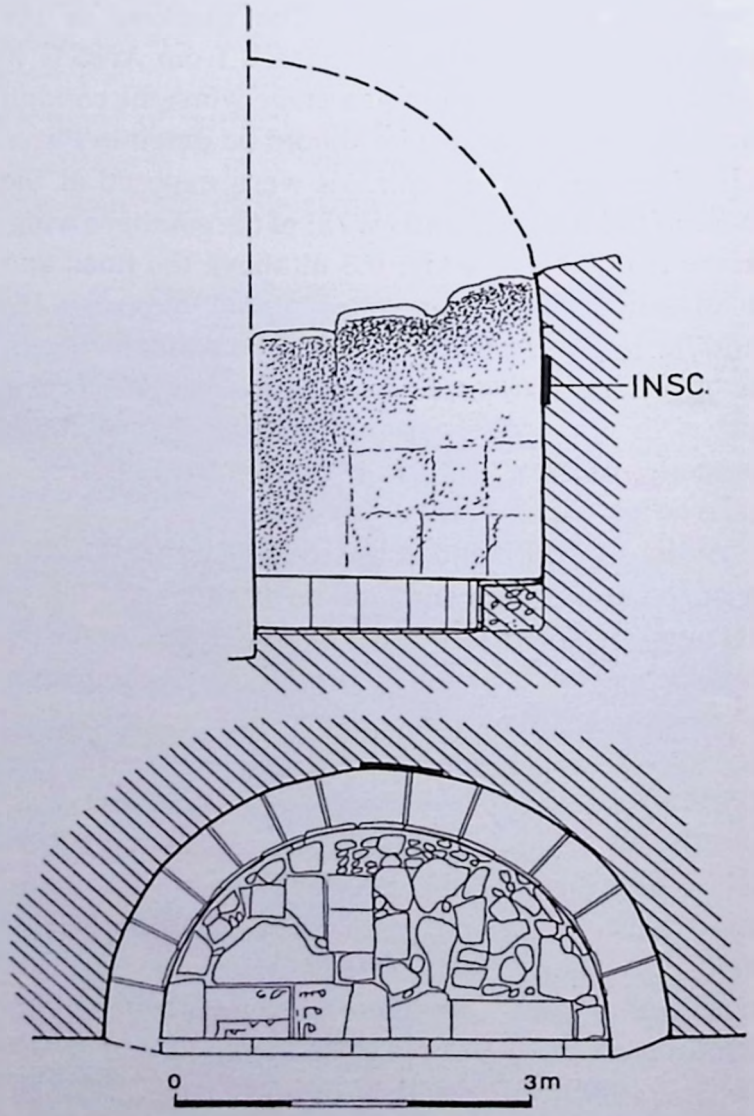


Fig. 237. Plan and cross section of the semicircular alcove in W13.

proposed *palaestra* to its north, was also intentionally blocked. The blocking of all these entrances was connected with the construction of the water conduit above the floor, which begins in Area G, runs along W73, and enters the corridor. The ultimate destination of this conduit, and of the corridor in Area J, is unknown.

Area F: The Service Area
(see above, Figs. 169, 203)

Several alterations made in the central part of Area F may be attributed to the Umayyad period. Inside the apsidal bathtub (L. 607), which was built in the Byzantine period (Phase II), two segments of a Roman basalt pipe were found (Fig. 238). Both of them probably had formed part of the adjacent stone pipe, and thus the pipe which was part of the cold-water system of the baths complex went out of use in this period or earlier.

W58, built between the two southern piers of W6, can also be attributed to the Umayyad period. This wall is 0.45 m wide and preserved to a height of 2.3 m. Its bottom part is built of mortar and small- and medium-sized fieldstones; a section of the upper part, preserved above a height of 1.4 m, is covered with pinkish hydraulic plaster. The upper part is narrower (0.3 m), ranging in height from 0.55 m at the center to 0.85 m at the sides. At the bottom of the upper part is a square opening (0.27×0.27 m). The function of the wall and both its parts is not at all clear. At the bottom of W58, we found a section of lead pipe (7 cm in diameter and 1.2 m long) in secondary use. Its continuation links up with a clay pipe affixed to the western face of W5. This pipe was probably part of some sort of installation connected with W58.



Fig. 238. Two stone pipe segments in the apsidal bathtub (L. 607) of Area F, looking east.

In the front of the southern alcove of W37, we revealed a small 0.5-m-wide parapet that should be attributed to Phase III. Two of its courses are preserved. It is built of ashlars in secondary use and is preserved to a height of 0.7 m.

At the top of W29, one can discern a late repair made of dressed stones in secondary use. At its upper end, a 0.4-m-wide threshold or windowsill is preserved. This repair probably belongs to the last building stage in this area, as do the two pipe segments found below floor level (Fig. 239) which probably once formed part of the stone pipe that went out of use in the Umayyad period.

At the northern end of Area F (L. 800), next to the late blocking of W17, two drainage channels and a gutter were found (Fig. 240). The gutter, next to W17, served to drain water from the roofs. It began as a vertical channel (0.5 m wide and 0.53 m deep) crudely carved in the western face of W17, which probably once contained the actual clay drainpipe. The gutter, 0.2 m wide and 0.3 m deep, runs southward along W17. It descends southward; we may thus assume that the water flowed into the large drainage channel of Area F.

A 1.7-m-long section of another channel was found next to the corner formed by W41 and W40. It is 0.35 m wide and 0.5 m deep. The bottom of this channel is ca. 0.3 m lower than that of the gutter to its south. These channels were thus built one on top of the other, each draining a different part of the building.

Another channel, exposed for a length of 7.5 m, was near the above-mentioned corner and cut across L. 800 diagonally. It is 0.2 m wide and 0.3 m deep, and its walls, which are built of ashlars in secondary use, are 0.2 m thick. Two rectangular stone beams (0.3×0.45 m) were exposed in situ at



Fig. 239. Two stone pipe segments in the foundations of the walls west of W29, looking east.

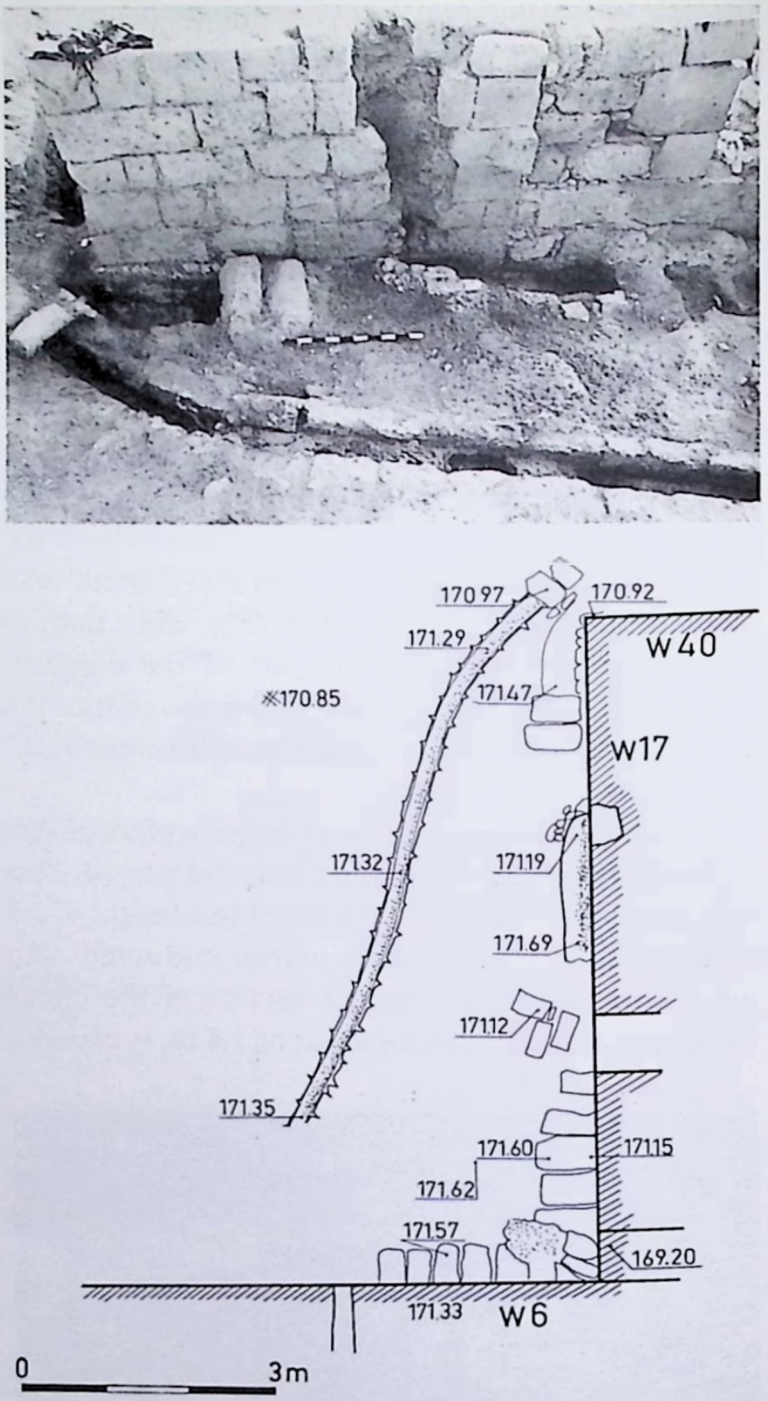


Fig. 240. Drainpipe and two drainage channels west of W17, in the area northwest of the baths, looking east.

the northern end of this channel. The flow of water in these channels was from north to south.

PHASE IV: THE ABASSID-FATIMID PERIOD (POST-749 C.E.)

The earthquake of 749 destroyed the building totally and instantaneously. The intensity of the earthquake is indicated by the large amounts of rubble that filled the halls. In Area D, parts of the walls and ceiling collapsed on top of one another, filling the central pool. In other areas, especially in the southern part of the baths complex, the rubble was found on top of a thick (1 m and more) layer of alluvium; in the oval pool of Area G, the alluvial fill is 1.5 m thick (Fig. 241).

The destruction appears to have been on such a large scale that the inhabitants of the site were unable to clear the rubble. Instead, they levelled the area above the ruins and made secondary use of the early masonry in order to erect temporary walls. The ceramic finds on these late levelled surfaces include 33 potsherds indicative of the Abbasid-Fatimid period (Chapter 9).

Phase IV settlement activity is evident at the southern end of Area E, as well as in Areas B and A. It appears that in these parts of the building, the vaults, or parts of them, remained standing and could be used for shelter. In the southern part of Area E (L. 500), a floor of packed earth was found



Fig. 241. Layers of alluvial fill in the oval pool of Area G, looking south.

on top of the ruins (Fig. 242); it was delimited on the west by a poorly-built wall (W35) running perpendicular to the southern wall (W1). In the center of W35, a 0.6-m-wide entrance was built. It appears that this wall, together with W1 and W13, delimited a room measuring ca. 3×4 m. In the center of this room, remains were found of a cooking hearth (0.6 m in diameter) which was used by its inhabitants.

In the eastern room of Area B (L. 204), a late floor was found at a higher level than that of the western room. In the southeastern corner of the locus, remains of a baking oven (0.6 m in diameter) were revealed, and next to it an intact basalt mortar, indicating that a temporary settlement existed at the site.

In the western room (L. 200) of Area B a late plaster floor (at -171.45) was discovered on top of stones in secondary use that served as its bedding (Fig. 243). At this level, the two entrances in W9 connecting the two rooms were intentionally blocked (Fig. 244). It appears that access to the western room was from Area A.



Fig. 242. Late packed-earth floor (L. 500) at the southern end of Area E, looking west.



Fig. 243. Late stone floor (L. 200) in the western room of Area B, looking west.

Remains from the same period were found in nearby Area A. On top of the 1-m-thick layer of alluvium was a well-laid stone floor; parts of which are preserved in situ (Fig. 245). The floor is made of dressed basalt slabs in secondary use. The stones average 0.3×0.6 m in size and are 0.2 m thick; their lower parts, which are buried in the alluvium, are unworked.

The floor (at -173.42) covers the entire area of the hall, including the walkways. A section of this floor was exposed on top of the walkway in the northwestern corner of the hall, where the floor level is higher (-172.93). This difference in height



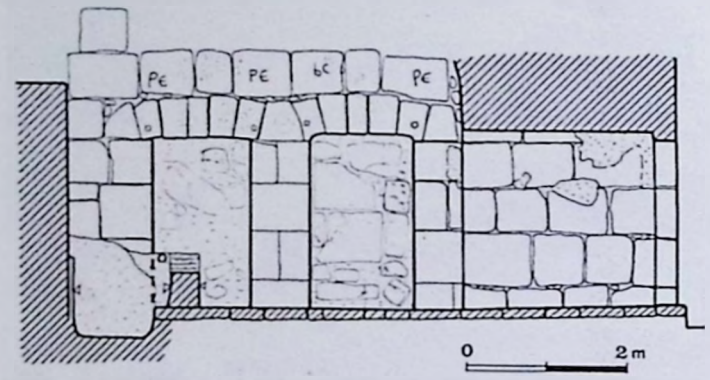


Fig. 244. Blockage of two entrances (in W9) connecting the two rooms of Area B, looking east.



Fig. 245. Late stone floor covering the benches of the pool in Area A, looking southeast.

of 0.5 m was most probably due to the sinking of the center of the floor.

The floor was covered by a layer of alluvium, above which, in the debris, were remains of parts of the vault. It appears that parts of the ceiling vault in Area A were still standing after the earthquake of 749. The lack of partition walls indicates that at this stage the hall served as a shelter for a relatively large group of people, and not as a domicile for individuals, as was noted in Areas E and B. The spring probably continued to attract bathers to the site and Area A may have been repaired in response to their need for living quarters.

PHASE V: THE MIDDLE AGES

Insignificant remains from the Middle Ages, including remnants of construction and graves, were found in various parts of the site. Such remains were revealed close to the surface and usually not in clear stratigraphic contexts. Thirty-nine potsherds indicative of this period were found (see Chapter 9) scattered throughout the building itself. The small amount of potsherds and building elements from this period indicates a general state of abandonment.

Area B in the Middle Ages served as a burial site. Three graves were found close to the surface (L. 200) in its western part: two of them were built and the third was merely a human skeleton buried in the earth. The best-preserved grave is the central one, consisting of medium-sized stones, some of which were dressed and in secondary use (Fig. 246). It is rectangular, measuring 0.2×1.5 m, and has a general east-west direction. Northeast of it is a smaller grave, measuring 0.7×1 m.

The above-mentioned skeleton was found almost intact in the southwestern corner (Fig. 247). The corpse was laid in a prostrate position, with the head facing west and inclined slightly to the south, a position characterizing Muslim burial practice. On its left wrist was a rusty iron bracelet. Due to the lack of datable small finds, it is impossible to determine with accuracy the time of burial.

Remains of a very crudely built structure (L. 100) were exposed in the center of Area A (Fig. 248). It is made of building stones in secondary use, including parts of columns, capitals, bases, etc. It became evident that it originally consisted of two rows of basalt pillars. The rows extended in a general east-west direction. Five pillars survived in the northern row (Fig. 249), and four in the southern row; they are 1.2 m apart. The distance between the two rows – 3.5 m – is identical to that



Fig. 246. Muslim grave close to the surface in the western room (L. 204) of Area B, looking west.



Fig. 248. Late structure in the center of Area A, looking west.



Fig. 247. The skeleton in the Muslim grave, looking south.



Fig. 249. Elements in secondary use in the northern row of pillars of the late structure in Area A, looking northwest.

between each row and the adjacent long wall of the hall. These pillars probably served as supports for some sort of shading installation made of perishable materials.

Together with the pillar structure, a crude staircase was built opposite the entrance in W2 leading into Area G. The width of the steps is 1.8 m and their height is 0.2 m. They are located between two short walls perpendicular to W2. The level of the top step (-171.99) corresponds more or less to the bottom of the pillars, and thus we may conclude that these two elements were contemporaneous. The shading installation that was supported by the pillars was probably used by visitors who came to bathe at the site. The staircase offered direct access to Area G via the entrance in W2.

In the northeastern corner of Area E, late walls were found close to the surface. An entrance is discernible in one of the walls. Next to these walls, above the southern apsidal room (L. 517), a round lime furnace was found (Fig. 250). Its inner diameter is 2.5 m and its walls are 0.3-0.4 m thick and preserved to a height of 1.2 m. The opening to the furnace, through which wind entered, faces west. Limestone and marble masonry from the site was probably "consumed" in this furnace, including statues and architectural elements that had decorated various areas in the early periods.

In Area F, west of the baths complex, remains were found of two channels close to one another and extending in a general north-south direction. They are relatively narrow, each measuring 0.2 m in width. The general direction of the channels does not relate to the baths complex, and we may therefore conclude that they were built at a stage when the building had ceased to function. At the end of the excavation part of a marble column was discovered in a cross section in the northern part of Area F (Fig. 251). The face of the column is fluted with diagonal grooves. (Such columns are termed "Apamaea columns" after the city of Apamaea in Syria where dozens of them were found.) Its height is 1.1 m and its diameter is 0.38 m. This column was probably incorporated in some part of the baths complex; its discovery in the layer of debris does not permit us to determine its date or original location.



Fig. 250. Lime furnace (L. 517) above the southern apsidal room, looking southwest.



Fig. 251. Fluted marble column in the debris northwest of the complex, looking north.

PROPOSED RECONSTRUCTION OF THE BATHS COMPLEX AND ITS FUNCTIONS

Yizhar Hirschfeld

Any attempt at reconstructing the baths complex must rely primarily upon the physical reality at the site. In this regard we encountered difficulties, since excavation of the building has not been completed. The missing information mainly affects our proposed reconstruction of the building's plan and functions, but it also hampers our attempt at reconstructing aspects such as building phases and daily use of the baths. Even the size of the unexcavated area is unknown, and thus the dimensions of the entire complex can only be conjectured.

Another source of information for understanding the building are references to it in literary sources: stories and accounts of events connected with it, and direct descriptions of the site in different periods. These descriptions – ranging in time from Strabo, who mentions the features of the spring, to Buckingham in the early 19th century, who even provides an illustration of the building, or later scientific reports – supplement our knowledge of the remains. Various inscriptions found at the site, some of which hint at the functions of various parts of the building and even the itinerary followed by visitors, also furnish valuable information.

Another approach to the study and reconstruction of the complex is by comparing it to other bathhouses. The main difficulty in this approach is that thermal baths (*thermae*) are uncommon and have received little attention. The main difference between regular bathhouses and *thermae* finds expressions in their plans, various functions, and the course of progress of the bathers, but not in the physical shape of the architectural and structural space.

RECONSTRUCTION OF THE PLAN

As noted, the excavation of the site is not complete and we lack certain information, especially with regard to the eastern part of the complex. In order to give the reader an idea of what remains unknown, we may compare the exposed area of the Hammat Gader baths – ca. 5,500 m^2 only – with that of the *thermae* at Chivitavecchia, Italy – 16,000 m^2 (Yegül 1992:112-115). In addition to bathing halls, the complex at Civitavecchia includes rest and remedial rooms, a thermal center, a large peristyle courtyard (*palaestra*), promenades, subterranean passageways, a hostel, library, etc. It is possible that these components, or at least some of them, are also present in the unexcavated area of the Hammat Gader baths, especially its eastern part.

Despite this lack of information, we are able to carry out a comparative study of the part of the complex that has been excavated. This examination shows that the baths of Hammat Gader were built according to a design characteristic of *thermae* throughout the Roman world. These are defined as bathing structures composed of series of halls, each containing a central bathing pool (Ward-Perkins 1981:354; Heinz 1983:165; Delaine 1988:24). Several examples of this type of *therma* were found in various places throughout the Roman empire. At Augusta Traiana, Bulgaria, second-century *thermae* consisting of four large bathing halls were revealed (Hoddinott 1975:214-215), while the *thermae* of Aquae Flaviae in Portugal were found to contain only two bathing pools (Yegül 1992:111). In each of these bathing halls, there was a central mineral water pool for communal bathing. Two more, slightly different, examples are the *thermae* at Bath in southwestern England and Badenweiler in Germany. The baths at Bath, which were built in the first century C.E., have three main bathing halls for thermal bathing and next to them regular bathing facilities (Cunliff 1969:128-129). A similar arrangement was also found at Badenweiler (Brödner 1983:167-168).

An examination of the plan at Hammat Gader shows conclusively that the various bathing halls

are not arranged along a single axis of symmetry (Fig. 252). Indeed, almost every individual unit within the complex has an internal symmetry of its own. This is logical and has parallels in many other bathhouses. However, because of both the way in which the complex was used and operated and since the site had a number of foci, the general plan of the excavated part is asymmetric.

The clearest focus is the hot spring – the heart of the complex and the reason for its erection at this spot in the valley of Hammat Gader. The placing of the spring in the southeastern corner of the complex was apparently based on functional considerations:

1) The halls next to the hot spring would contain the hottest pools and be the most important ones in the complex.

2) The spring was of ritual importance and it was therefore necessary to make it readily accessible also to those who did not come to immerse themselves, but rather to present offerings at the spring's source, to make vows, etc.

3) The constantly-drained surplus water which was not transferred to the pools was to be directed outward, toward the Yarmuk River.

Another focus in the design of the Hammat Gader baths is the street which led to the building. It may be assumed that the street network was adapted to

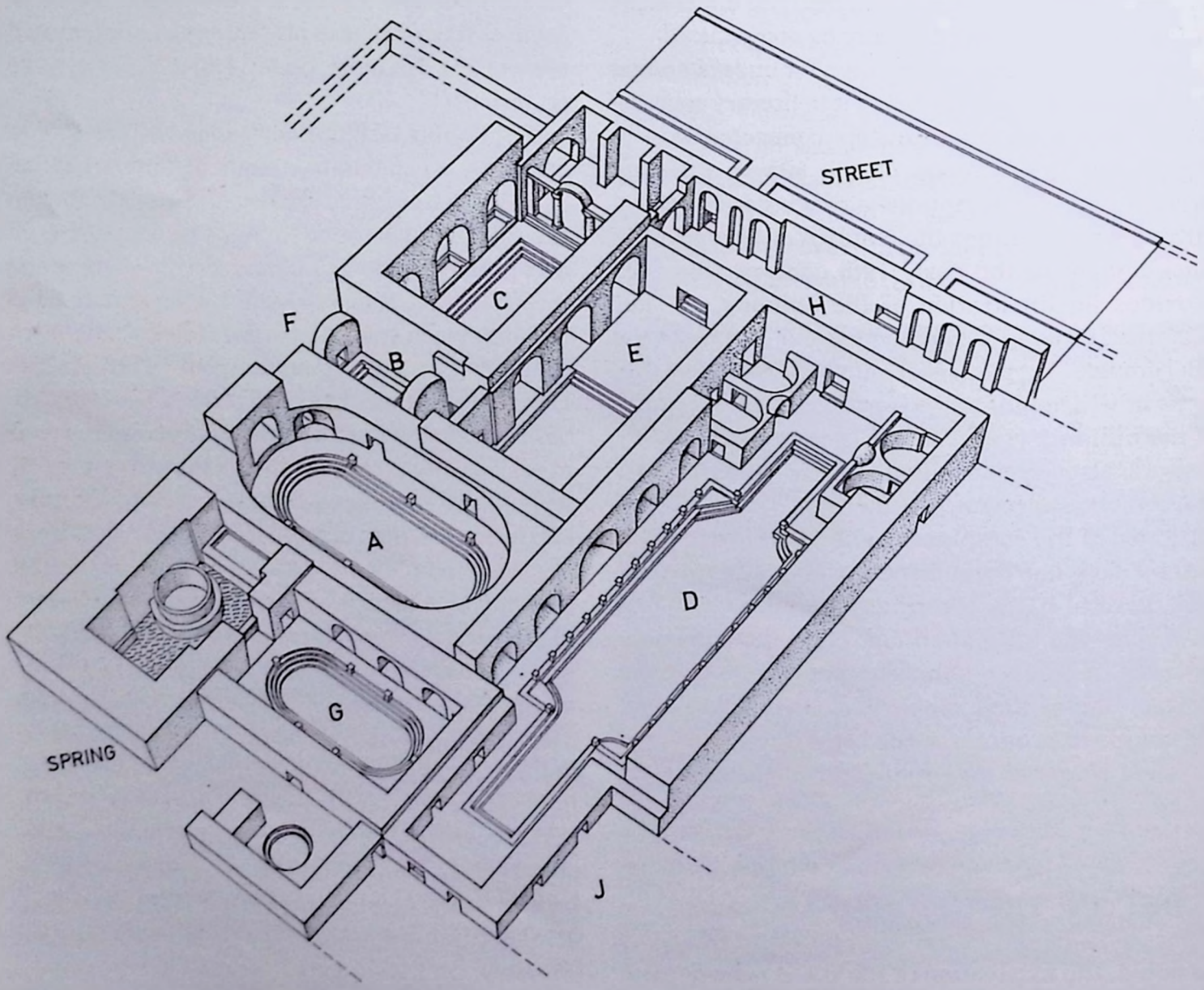


Fig. 252. Partial reconstruction of the baths structure, looking north.

the location and outlines of the bathhouse (Hirschfeld 1987).

The layout of the bathing halls at Hammat Gader dictated a circular movement typical of most *thermae* known to us in the empire. This made possible the simultaneous use of the facilities by a large number of bathers (Yegül 1992:119). Moreover, the circular layout of the Hammat Gader baths is the result of various foci that served as a basis for the plan of the complex.

Since the baths complex was not exposed in its entirety, the location and very presence of the main entrance remain open questions. In regular bathhouses there was a set order to the activities, and the relationship between one function and the next, as well as the movement of the bathers, is clear, but in *thermae* this was not necessarily the case. Moreover, at Hammat Gader the waters of various springs were utilized, each having different therapeutic properties. Therefore, not all the bathers passed through every hall, and in all likelihood the designers considered access to each unit independently. In our case, we must reach a conclusion regarding the movement of the bathers as well as the functions of the various halls on the basis of the entrances we revealed.

We are able to learn about the various uses of the halls and bathing pools at the site from the abundance of inscriptions found there. Inscription no. 1, revealed at the center of symmetry of the floor of Area C (Hall of Piers), states explicitly that the paved area around it would be used for sports. The reference was certainly to the marble floor above the filled pools in Areas C and E, on both sides of the wall of piers (W7) separating them. The inscription is dated to the mid-fifth century and therefore, from this time on, the Hall of Piers and perhaps also the adjacent Hall of Inscriptions were used as recreation or sports halls.

The most interesting inscription in this regard is the "Eudocia Inscription" (no. 49), mentioning the names of various parts of the building (Green and Tsafrir 1982:86-90). Of particular interest are those pools whose names derive from the temperature of their water, e.g., "the large tepid pool" and "the small tepid pool." Furthermore, "the Patriarch's spring" is perhaps a reference to the hot spring itself. We are unable to identify with certainty the bath components mentioned in this inscription, but it is clear that the names relate to the fact that the water temperature varied from pool to pool. The bathers who followed a circular course within the baths complex went from one pool to the next, the temperature in each gradually rising, until they reached the pools next to the hot spring. After bathing in the hot water, they could relax in the large pool of Area D which most probably contained tepid water. The "large tepid pool" mentioned in the Eudocia inscription was probably the large pool of Area D.

Clarification of the functional aspects leads us to ask what existed east of the excavated area. The possibilities are many and varied, including: dressing rooms, recreation rooms and a large open space.

Beyond the massive basalt wall (W100) delimiting Area D on the east, we found a section of a basalt pavement which could have been part of an open courtyard (*palaestra*). The *palaestra* is one of the important components of the large *thermae* of the Roman period (Nielsen 1990:3), and its existence at the Hammat Gader baths should be anticipated in light of their size and magnificence.

It should be mentioned that south of Area D, we started to expose an elongated architectural space similar in width to Area H. The baths complex was possibly flanked on three sides (north, east and south) by a large peripheral corridor, of which the entrance corridor in Area H and the elongated space south of Area D were parts. The proposed plan of the entire baths complex (Fig. 253) is based on this assumption and on the presence of an east-west axis of symmetry which passes through the centers of the two semicircular alcoves in Area D.

Visitors entered the bathing halls (Areas C and E) from Area H in the northern part of the complex, while its eastern part was connected to the main entrance. This possibility is not unsubstantiated. A number of large baths in Asia Minor have a plan of this sort, i.e., they are flanked on three sides by a peripheral corridor, permitting free movement of the bathers from pool to pool. Such was the case in the baths at Ephesus and at Alexandria Troas, which are both dated to the mid-second century C.E. (Yegül 1992:279-283).

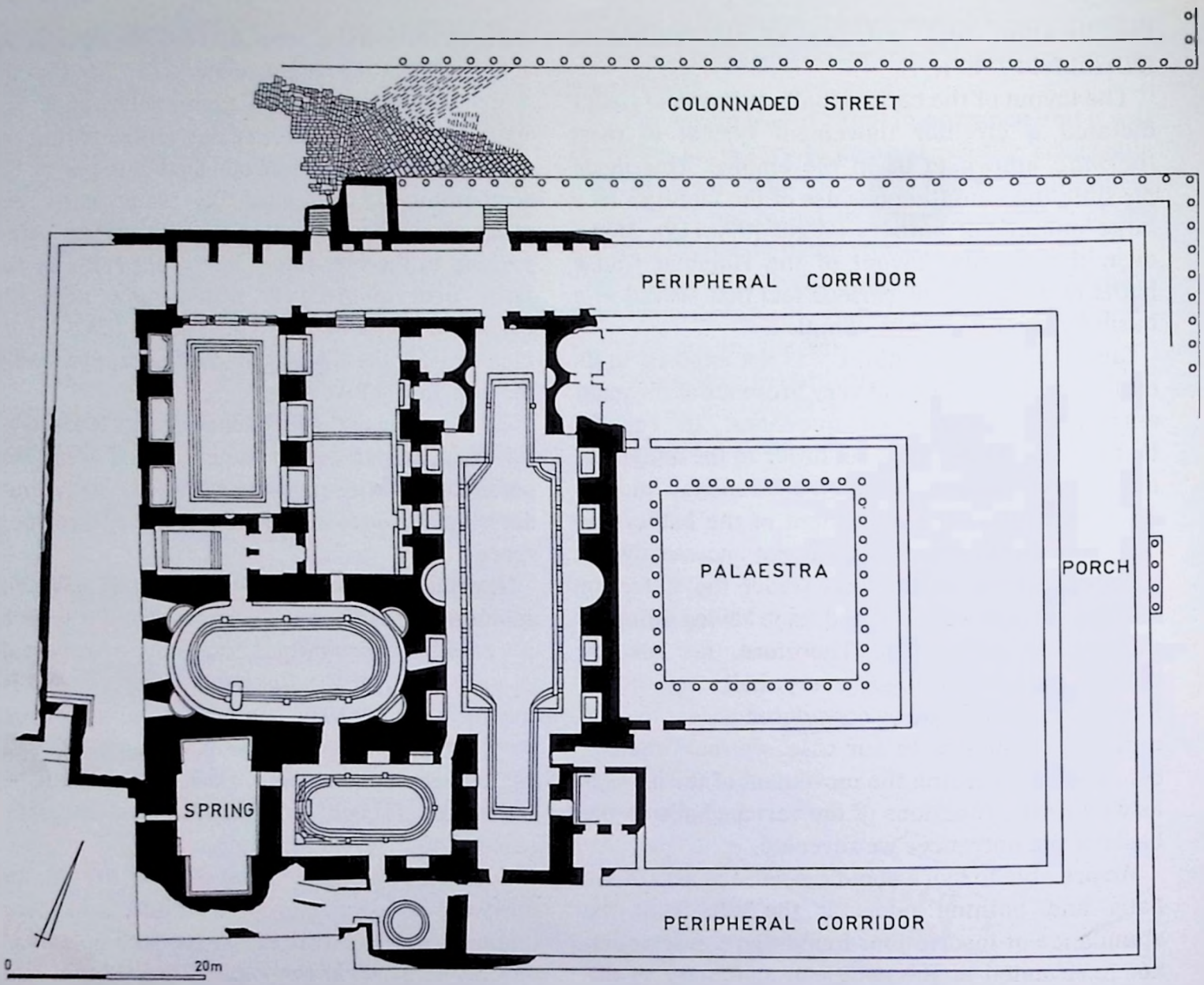


Fig. 253. Proposed plan of the entire baths complex.

Reconstruction of the Superstructures

The preservation of the Hammat Gader baths is excellent, and in a number of places entire vaults, parts thereof or their springs (Areas A and B) are preserved. The available data make possible a very precise theoretical reconstruction of the complex's appearance, including its roofs (Fig. 254).

We were guided by two basic assumptions: a) that all the rooms and halls were roofed; b) there was a need to illuminate and ventilate the halls. The finds at Hammat Gader and other comparable sites indicate that all the roofs were vaults and domes. The vaults themselves could have been barrel vaults or cross vaults, and much use was made of semidomes in alcoves and apsidal rooms.

Illumination of the architectural spaces was a requirement in all bathhouses, especially those referred to as "Imperial" (Giedion 1971:165-172, 229; Delaine 1988:21-23). Many windows were incorporated in the outer walls, and at times also in the interior ones; windows were sometimes built in the vaults themselves, usually at their top. We have precise data regarding the roofing of Area A, which consisted of a barrel vault with a semidome at either end. Two windows can be identified in the western semidome, the remains of which have been preserved *in situ* (see below).

The need to illuminate the building dictated the various heights of its ceilings. In this way, another

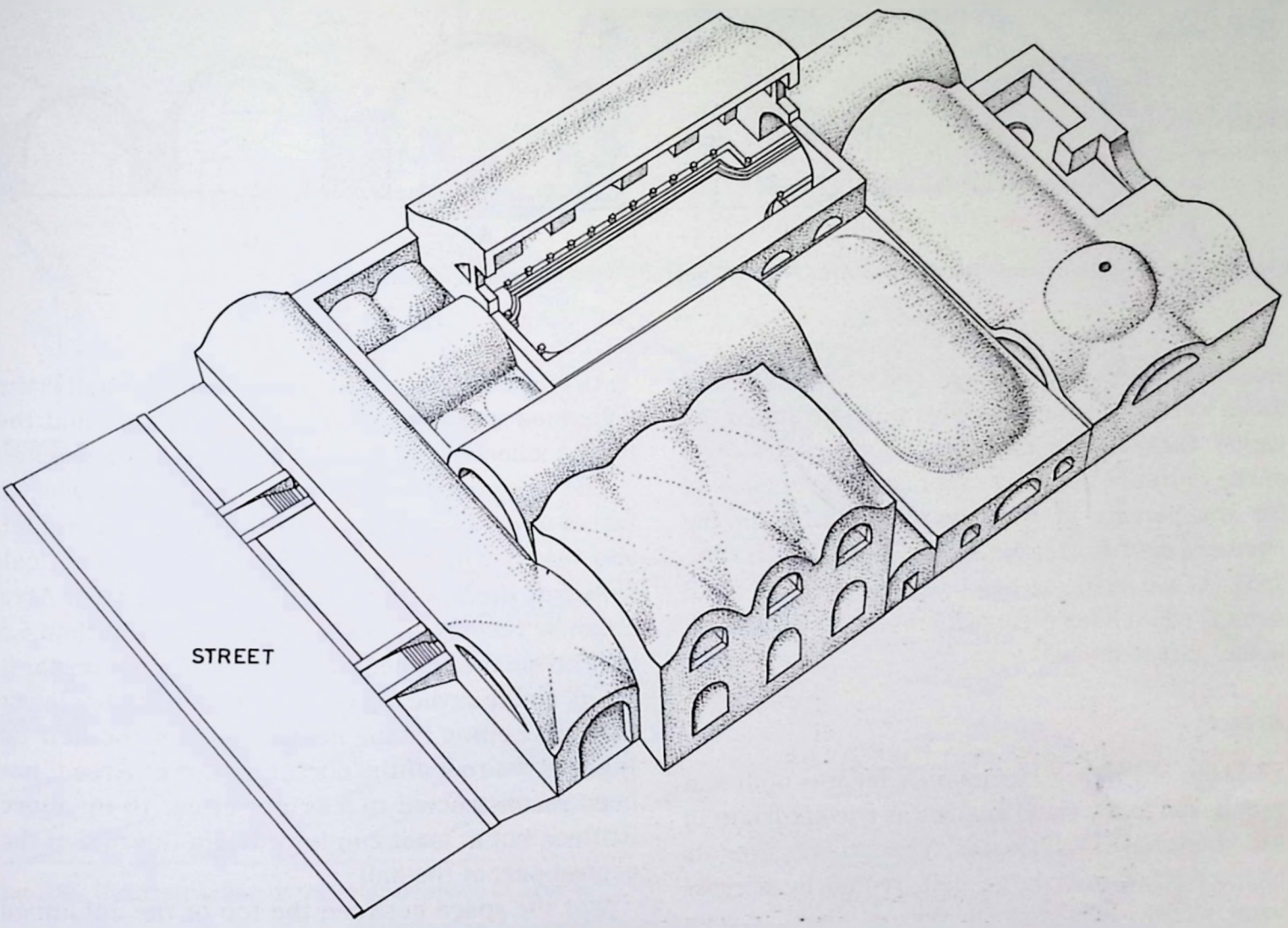


Fig. 254. Reconstruction of the roofs of the baths building, looking west.

row of clerestory windows could be built along the walls of a hall whose ceiling was higher than those of the adjacent halls.

The discussion below is devoted to the reconstruction of the various halls (according to the order of their description in the previous sections) and to the relevant functional aspects.

Area H

Visitors to the site undoubtedly entered the basalt-paved entrance corridor from the street on the north and then passed into the other halls. The revealed part of this corridor (its eastern end remains unexcavated) has two entrances from the street and three passageways leading into others parts of the complex. Its elongated plan, as well as the basalt pavement, clearly indicates its function as an entrance corridor.

Piers were found along the walls of Area H. This element, usually termed "a gallery framed by piers," is known from other baths, especially in Asia Minor. This is a long corridor lined with niches and is usually roofed with a barrel vault (Yegül 1992:414-416). The entrance corridor at Hammat Gader was possibly also roofed with an elongated barrel vault.

Regarding the height of the vault, we can only guess that it began at the top of the northern wall (W90), which also served as the rear wall of the sidewalk along the street. Since the street is 1.5 m higher than the floor of Area H, the top of the ceiling also was quite high – higher than that of a regular corridor. Moreover, it is possible that the height of the top of the vault exceeded that of the vault of the northern wing of Area D, which, according to the excavation data, is 6.5 m. This was high enough for the installation of two rows of windows on both

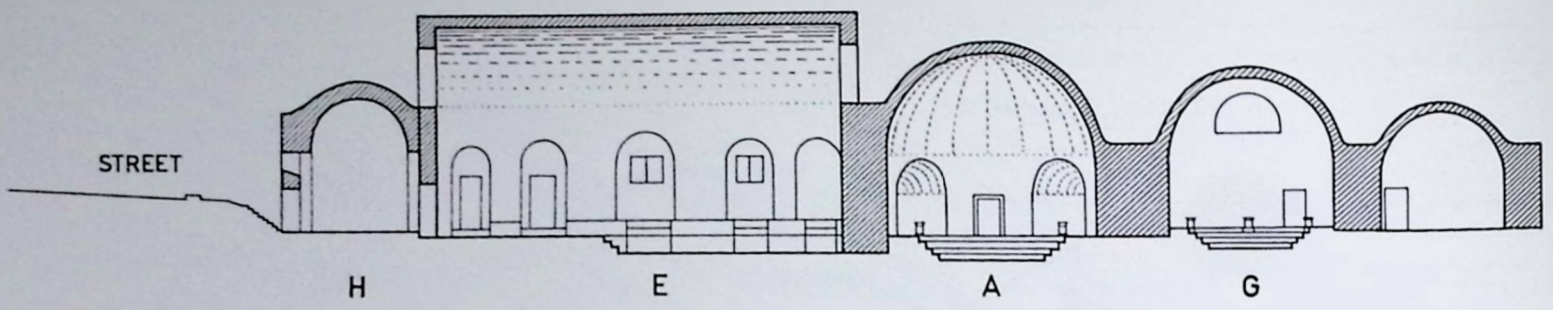


Fig. 255. Cross section across the width of Area H and along the length of Area E perpendicular to it.

sides of the entrance corridor (and it is possible that there were also small windows along the top of the vault). On the other hand, the relatively low level of the entrance corridor's roof could have allowed for the placing of windows for lighting in the northern wall of Area E (Hall of Inscriptions) (Fig. 255). As we shall see below, the northern wing of Area D could have received light from the central, wider part of the hall.

Area C

The Hall of Piers at Hammat Gader was built and functioned in the same manner as a *frigidarium* in the Imperial bathhouses. The *frigidarium* is characterized by a large hall, roofed by a cross vault whose sides rest on rows of piers. A good example of this is the *frigidarium* of the Hadrian baths at Lepcis Magna (Yegül 1992: Fig. 220). According to this parallel and dozens of others, one could reconstruct the ceiling of the hall as a cross vault resting on eight piers, four on each side (Fig. 256). Indeed, the relevant data for reconstruction of the ceiling in Area C are well founded. Two factors – the complete arch between the two middle piers of W6 and the maximum height of the columned portal – indicate that the ceiling, which contained a row of clerestory windows, began immediately above the mentioned arch. The central part of the hall was thus two stories high, with two rows of windows for maximum illumination. This was of paramount importance to the builders of the baths, since it is from this point that the bathing route at the site began.

Constructional considerations lead us to assume that the vault of Area C was probably of the same height as the vault of neighboring Area E, which, according to excavation data, was 12.3 m (Fig. 257).

An expression of the importance of the hall is the columned portal to the north of the pool and the three niches that adorned the hall's southern end.

The area north of the columned portal was, in fact, a direct continuation of the entrance corridor, and that is why their floor surfaces are identical. However, the level of the ceiling in this part of Area C can be reconstructed at a greater height than 6.5 m. The maximum height of the columned portal is 7.9 m, and thus the top of its arch was ca. 4 m lower than the ceiling of the central part of the hall. In Fig. 258 the roof of the northern part of Area C has been reconstructed to a height of ca. 10 m. above its floor, but at least 2 m lower than the roof of the central part of the hall.

Was the space between the top of the columned portal and the ceiling above it filled by a wall or was it open, leaving the columned portal as a free-standing architectural element? At sites with columned portals having straight (and not arched) architrave beams, as at the Imperial baths at Trier in Germany (Yegül 1992: Fig. 468), it is customary to reconstruct them as free-standing architectural elements. On the other hand, there are several examples of the same elements supporting a wall. A wall is depicted above the columned portal in Figure 256 to emphasize the transition from the long corridor to the bathing facilities.

Area E

The Hall of Inscriptions largely paralleled the functions of the Hall of Piers and had a large bathing pool in its southern part. Each of its walls has passages leading to various units surrounding it. The presence of several dedicatory inscriptions on the floor points to its function as an entrance. This phenomenon is reminiscent of the donors'

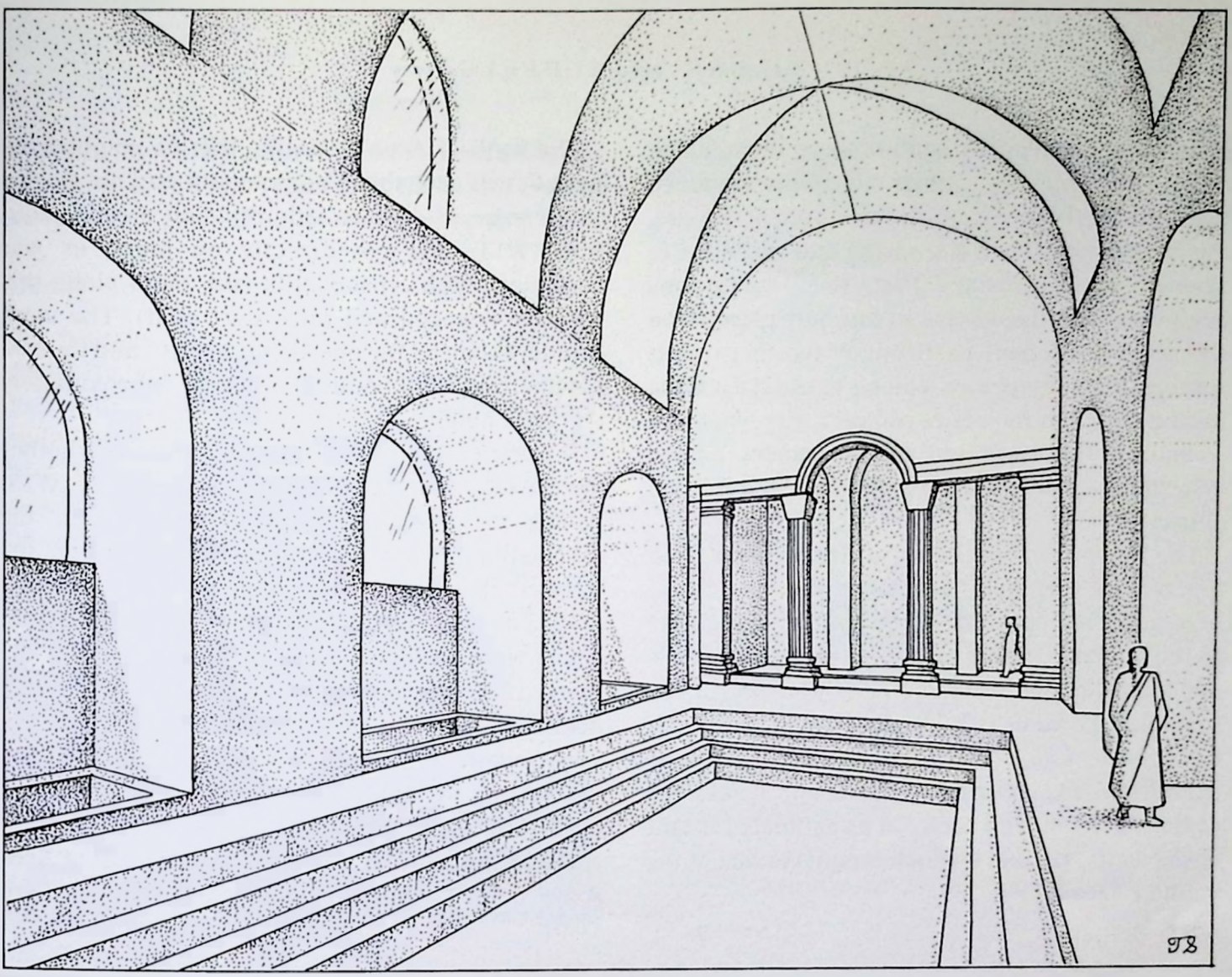


Fig. 256. Reconstruction of the interior space of Area C.

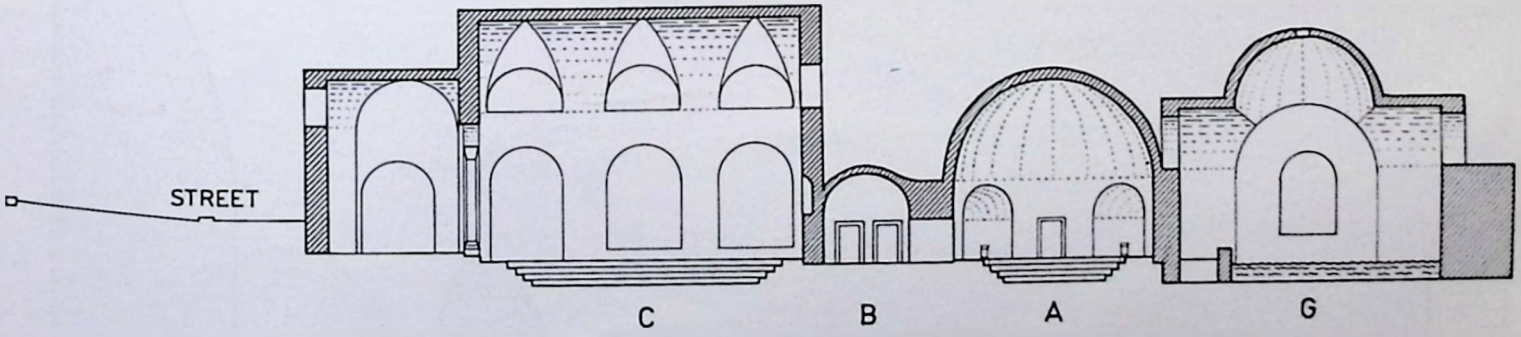


Fig. 257. Cross section along the length of Area C and across the width of the neighboring halls (Areas B, A, G).

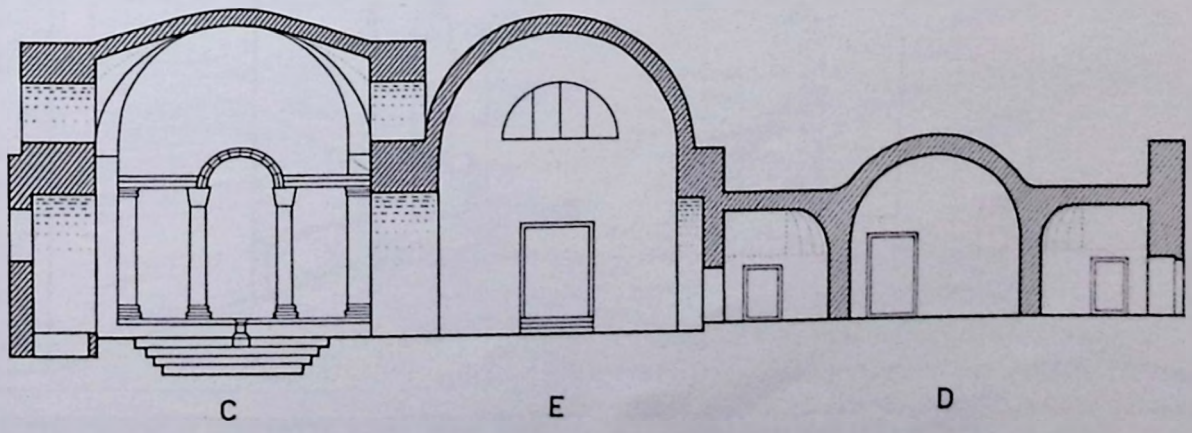


Fig. 258. Cross section across the width of Area C, Area E, and the northern wing of Area D.

plaques on display in central, prominent areas frequented by the public in many modern institutions. If there were a sacred spot at the site, this would have been the spring and not Area E. Therefore, it appears that the inscriptions beginning with the words "In this holy place..." do not refer to the hall itself but to the fact that it served as a passageway leading to the holy place (or indicate that the entire complex was sanctified – and in this case too the placement of the inscriptions points to the function of Area A as an entrance).

The remains of the ceiling of Area E are indeed few, but are very significant since they were found *in situ*. We are speaking of the courses at the base of the vaulted ceilings that were preserved at the upper end of the wide southern wall (W1). The spring of the vault is 7.9 m above the floor of the 8.8-m-wide hall. Assuming that the vault was barrel-shaped, one could add to this height the radius (= 4.4 m) and arrive at an estimated height of the vault – 12.3 m – which is equal to that of the vault in Area C (Fig. 259).

The vault of Area E, unlike that of neighboring Area C, was probably a barrel vault and not a cross vault, since its eastern side rests on a continuous wall (W13) and not directly on piers, as was customary with cross vaults (the piers along this wall are engaged and form part of it). The vault counterbalanced the one above Area C, and thus we assume that both of them were of approximately the same height.

A question not sufficiently clarified is whether the engaged pilasters along the eastern wall (W13) belong to Phase I. If the answer is in the affirmative, we must assume that between the pilasters there were arches that were also attached to W13 and supported the eastern side of the vault. There were windows between the pilasters of the eastern row; two of them were preserved in the wall itself. However, the hall's main source of light were two windows that could have been located beneath the vault in the hall's short walls on the south and north. The upper part of the southern wall was free-standing, as south of it was the lower vault of Area A (see below), while the upper part of the northern

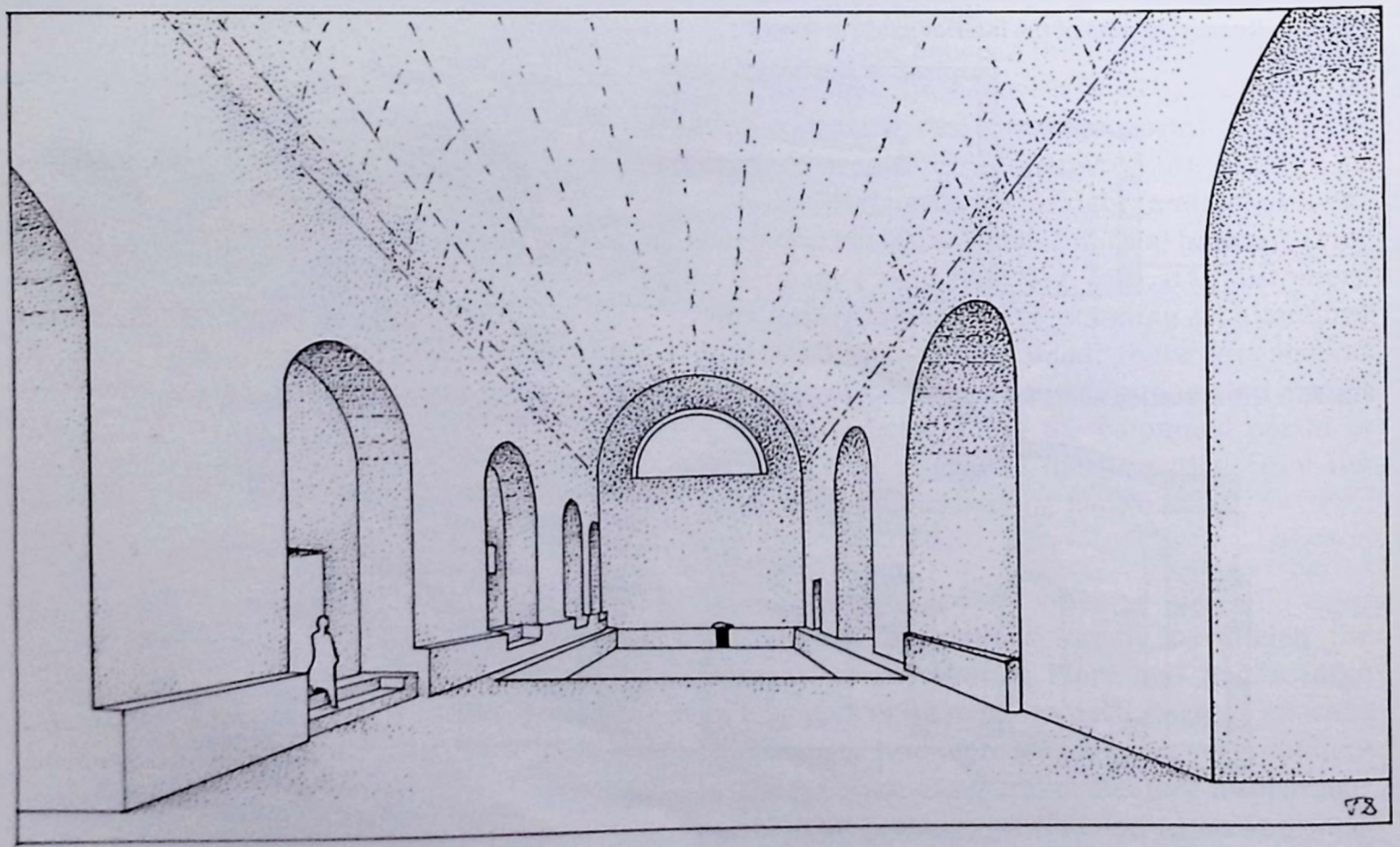


Fig. 259. Reconstruction of the interior space of Area E.

wall rose above the vault of Area H, which was low in relation to the roofs next to it. Light also entered the hall from Area C between the piers of W7.

Area B

The passage rooms, because of their relatively small size, are the best preserved ones at the site. Both of them were covered by long, narrow barrel vaults with a general east-west orientation (Fig. 260). In the eastern room, part of the vault is preserved *in situ* 6.5 m above the floor. The vault in the western room, of which a whole section is also preserved, is lower – 5.5 m above the floor. Because of this difference in height, a window was probably installed beneath the higher vault in the eastern room. However, the main source of light in the western room was the large window in its western wall (W8).

The low ceiling of Area B was designed to allow several windows to be built in the southern wall of Area C. The difference in height between the higher of the two vaults of Area B and the vault of Area C was ca. 5.8 m, so that two rows of windows could have been installed in the upper part of W5. In this respect, Area B functioned as a low, narrow passage area typical of *tepidaria*, which usually separate the larger *frigidaria* and *caldaria* (Yegül 1992:IX). Area B had the important function of a rest area, where the visitors relaxed after spending time in the magnificent Hall of Piers and before entering the Oval Hall for bathing.

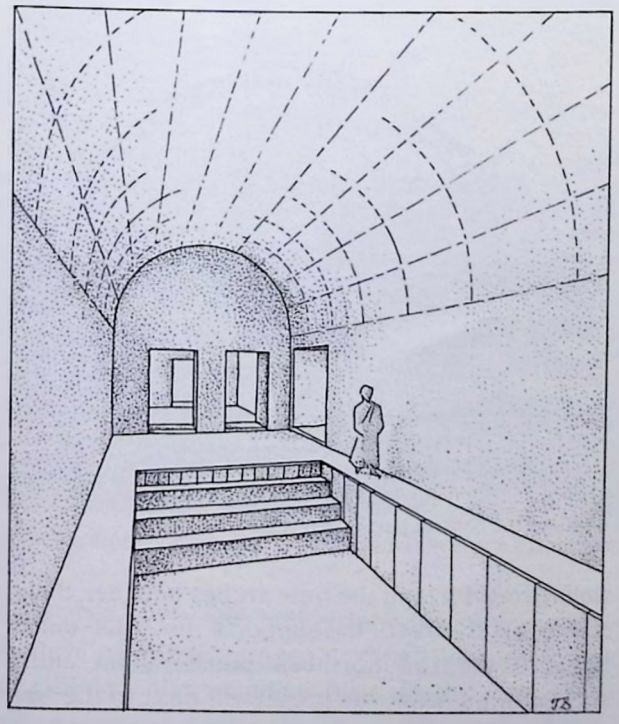


Fig. 260. Reconstruction of the interior space of the western passage room (Area B).

Area A

The Oval Hall was roofed by a combination of a barrel vault in the center and two semidomes at the sides. A reconstruction of the vault's height and shape is based on many sections that survived *in situ* (Fig. 261). Its spring is 5 m above the floor of the 11.8-m-wide hall. Thus, the vault attained a height of ca. 11 m above the floor. It appears that the designers of the baths intentionally lowered the vault of Area A in order to allow free entrance of light through the clerestory window beneath the vault of Area E.

The main sources of light in Area A were the windows in the western facade (W4). All told, the remains of five windows have been preserved: three at a lower level and two others that were built into the western semidome. These windows were part of the western facade of the complex, in which many windows were built (Fig. 262).

The Oval Hall is not unique in its plan. Examples of halls having this shape, with four semicircular "corner" alcoves, were found in various places. Worthy of mention are the baths of Alexandria (Qum e-Dikke) from the late Roman period (Kolataj 1983) and the Northern Baths at Banasa in North Africa (Yegül 1992:238-239). In both these instances, as in most of the other examples, the oval halls functioned as *caldaria* – a fact which lends support to our premise that this bathing hall served as the counterpart of the *caldarium* in a regular bathhouse.

Area G

In the debris of the oval pool of Area G (Hot Spring Hall), large voussoirs of a vault were found. Indeed, the late pool is oval, but the hall itself is rectangular and therefore we are dealing with a barrel vault (Fig. 263). This unit was difficult to light since it

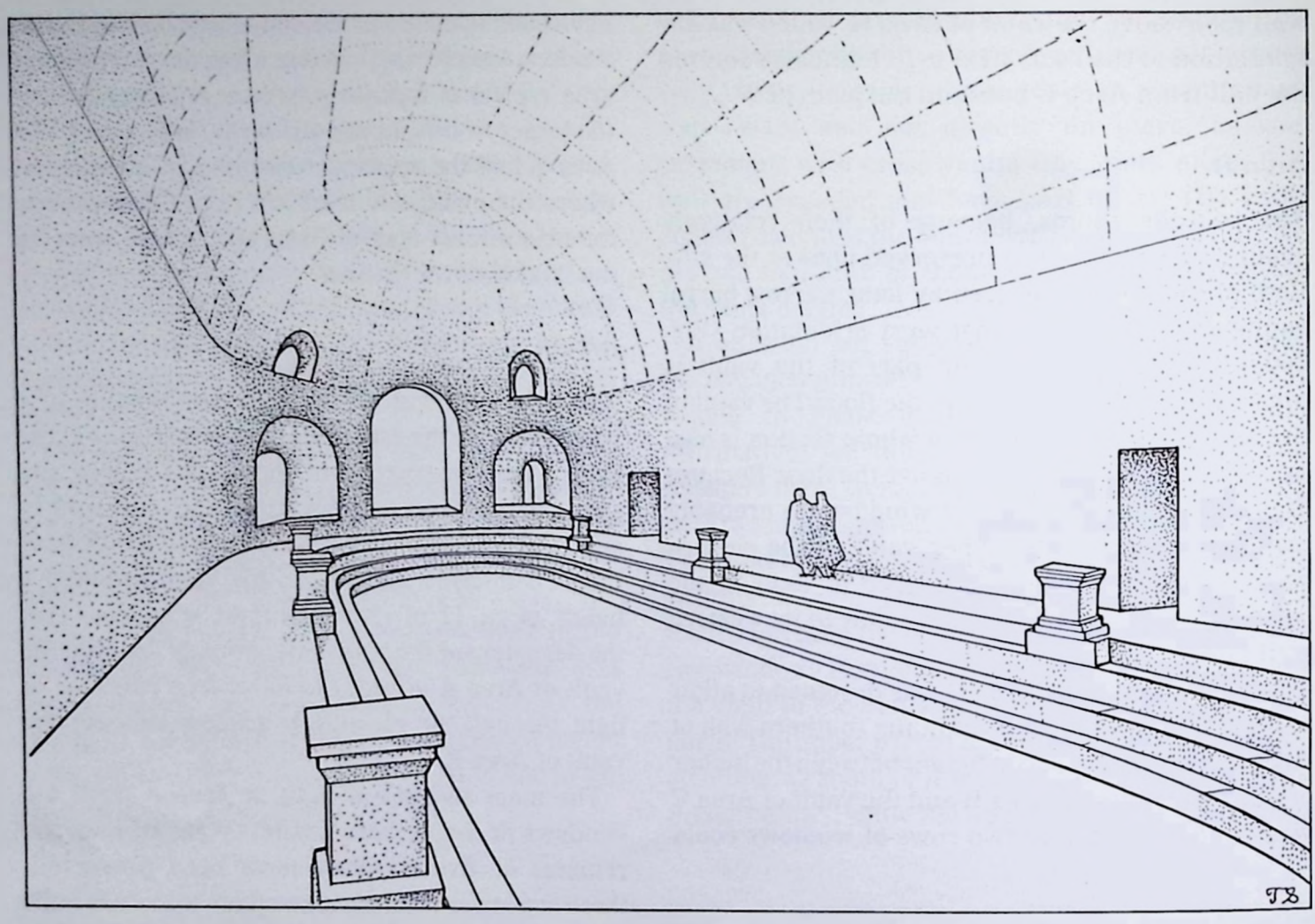


Fig. 261. Reconstruction of the interior space of Area A.

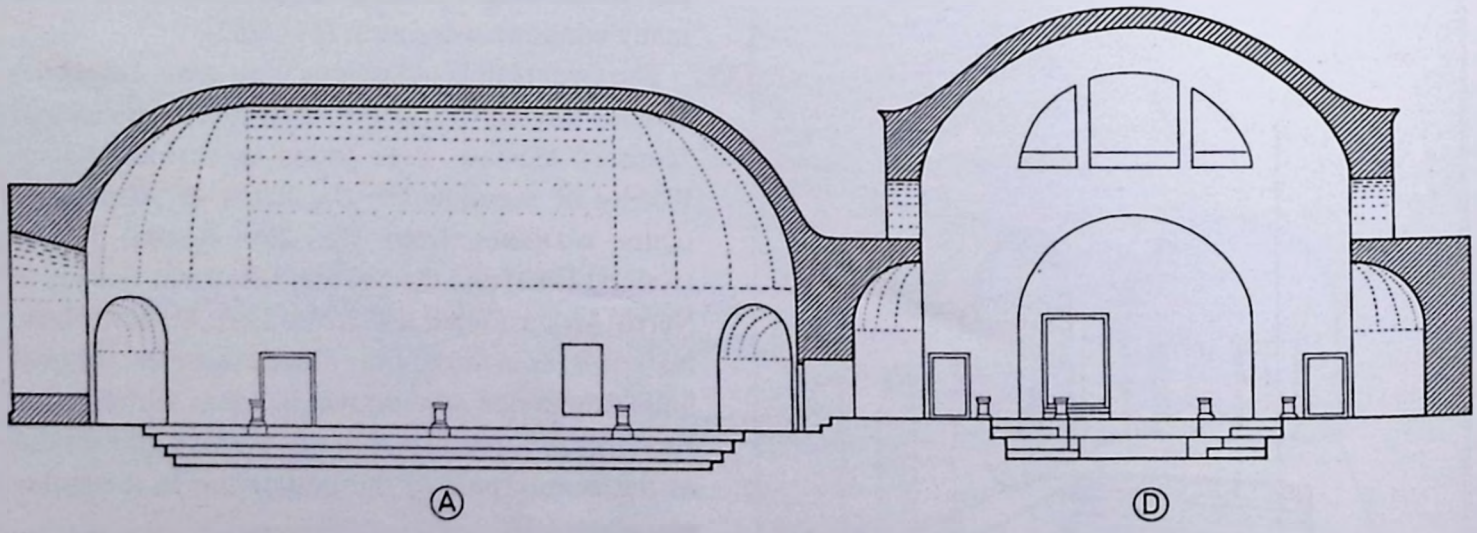


Fig. 262. Cross section along the length of Area A and across the width of the central part of Area D.

was flanked on three sides by units with high ceilings. Only on the south could there have been a lower ceiling which would allow for the installation of windows along the southern long wall (W54).

The area of the spring could have been roofed with a dome. Four corner pilasters integrated in the walls around it, and the four arches between them, could have served as supports for this dome. Between the two northern pilasters, an entire section of an arch was preserved next to the wall north of the spring. The arch's spring is 4.7 m above the floor and thus its estimated height is 8.3 m, at

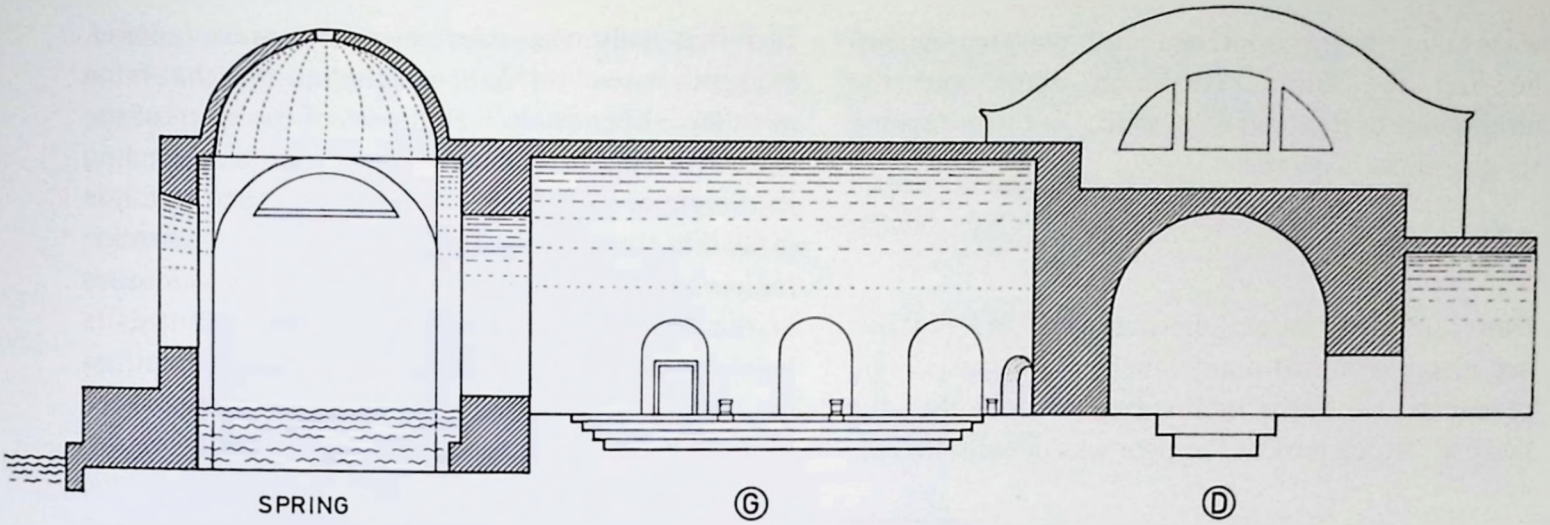


Fig. 263. Cross section of the spring and the hall east of the spring (Area G), and the southern wing of Area D.

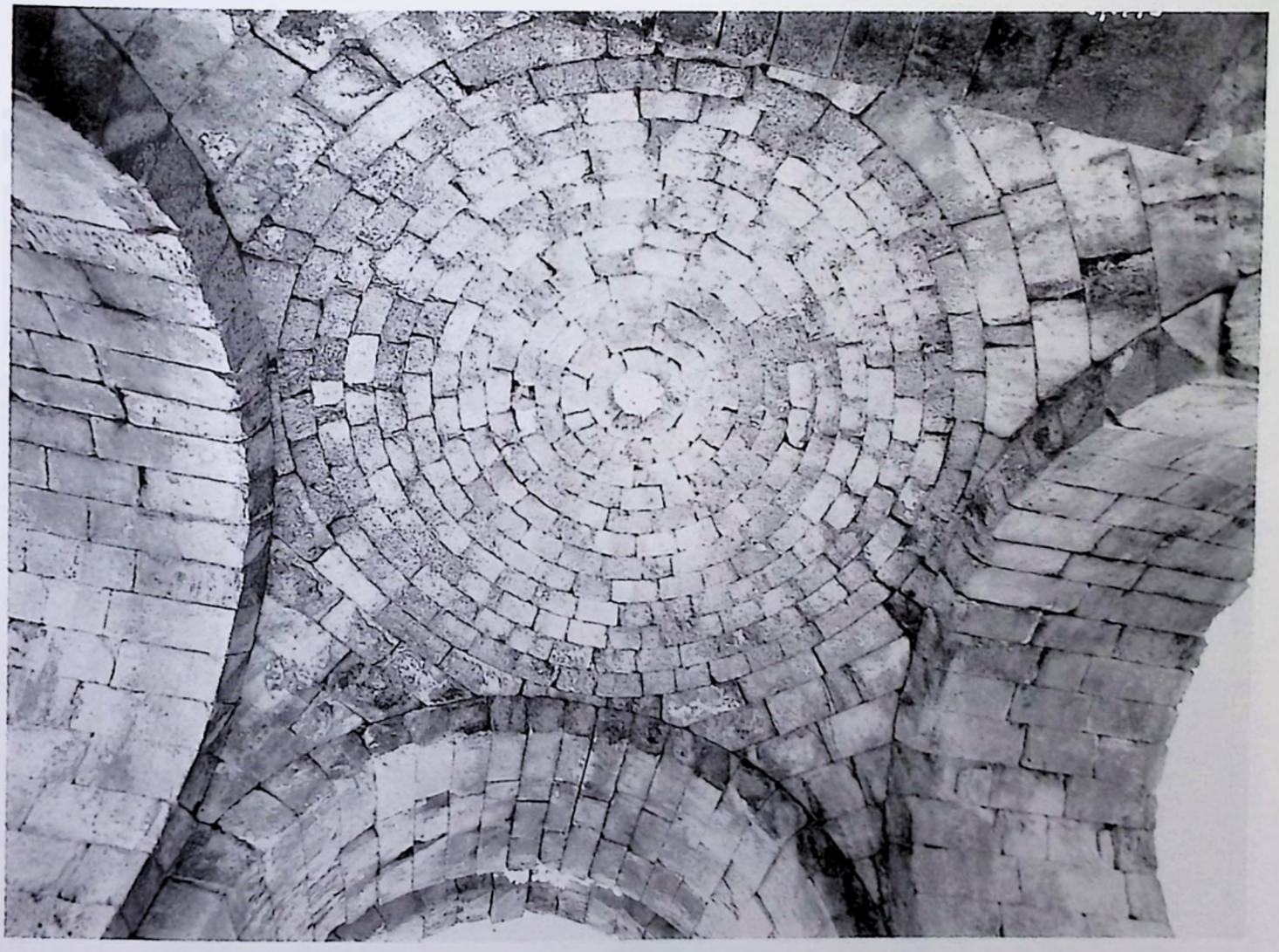


Fig. 264. Dome preserved in the *caldarium* of the bathhouse at Bostra (courtesy of the Israel Antiquities Authority).

least. This is ca. 3 m higher than the spring of the vault in neighboring Area A, thus allowing for the installation of a window beneath the arch. The dome towered above the four arches around the spring. Such domes were built at other bathhouses. The bathhouse at Bostra has a similar stone dome with a round opening for light in its center (*oculus*), this being a common feature in domed buildings of the Roman period (Fig. 264). Another source of light were the windows, whose possible location

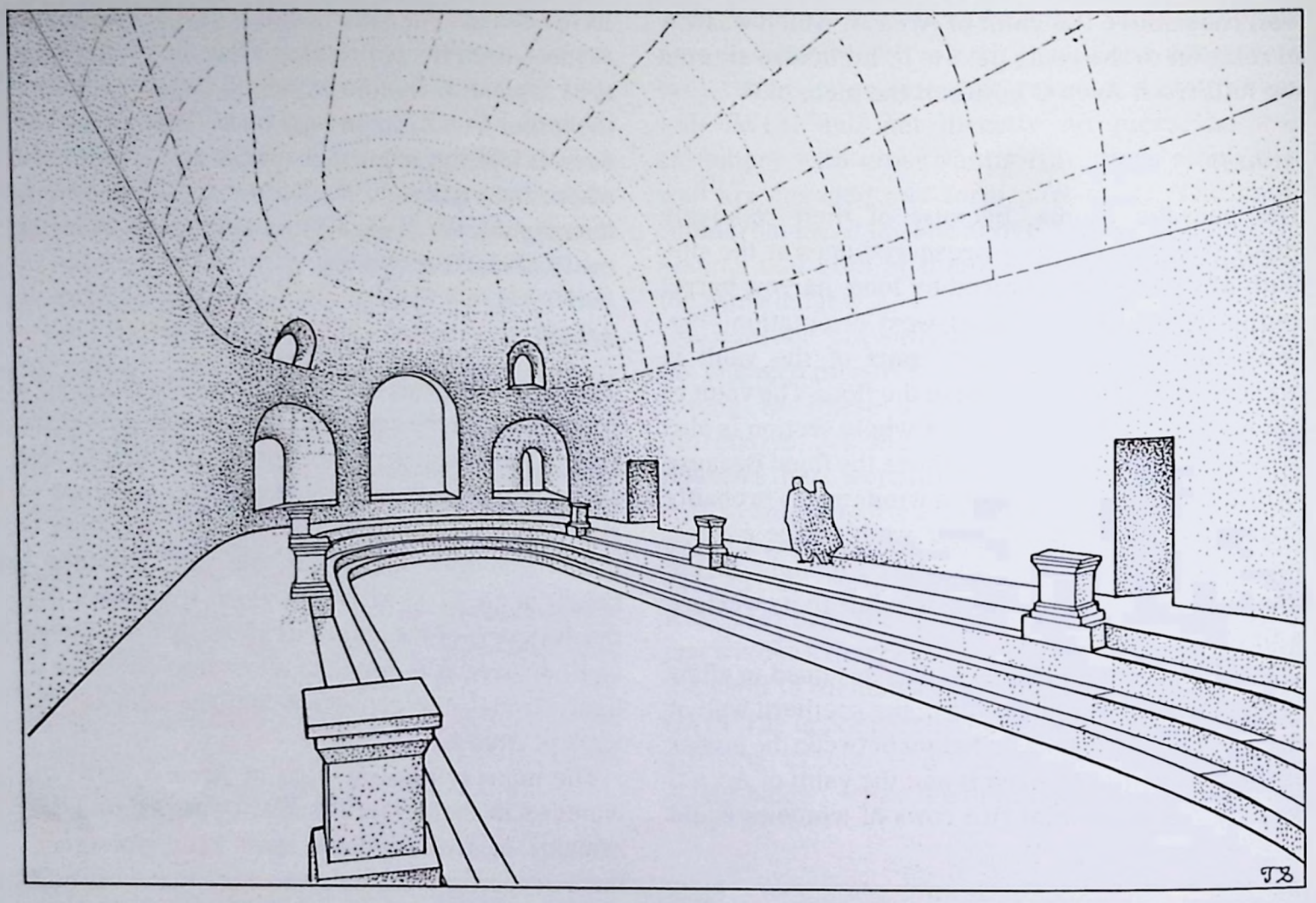


Fig. 261. Reconstruction of the interior space of Area A.

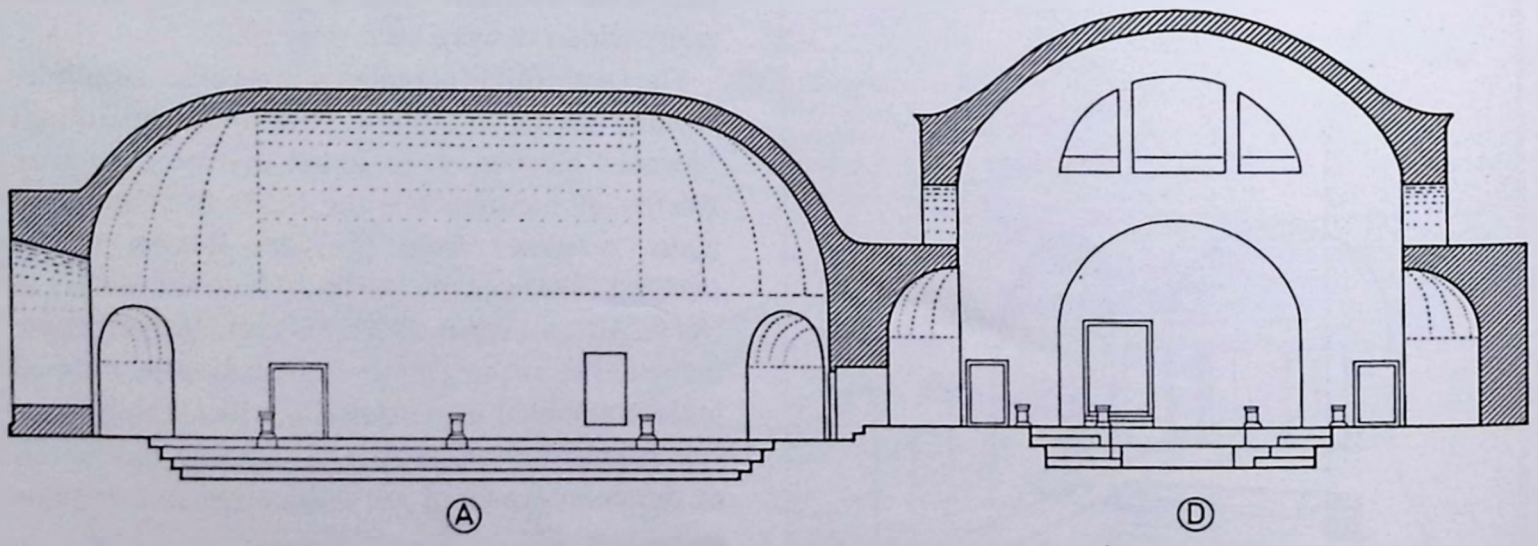


Fig. 262. Cross section along the length of Area A and across the width of the central part of Area D.

was flanked on three sides by units with high ceilings. Only on the south could there have been a lower ceiling which would allow for the installation of windows along the southern long wall (W54).

The area of the spring could have been roofed with a dome. Four corner pilasters integrated in the walls around it, and the four arches between them, could have served as supports for this dome. Between the two northern pilasters, an entire section of an arch was preserved next to the wall north of the spring. The arch's spring is 4.7 m above the floor and thus its estimated height is 8.3 m, at

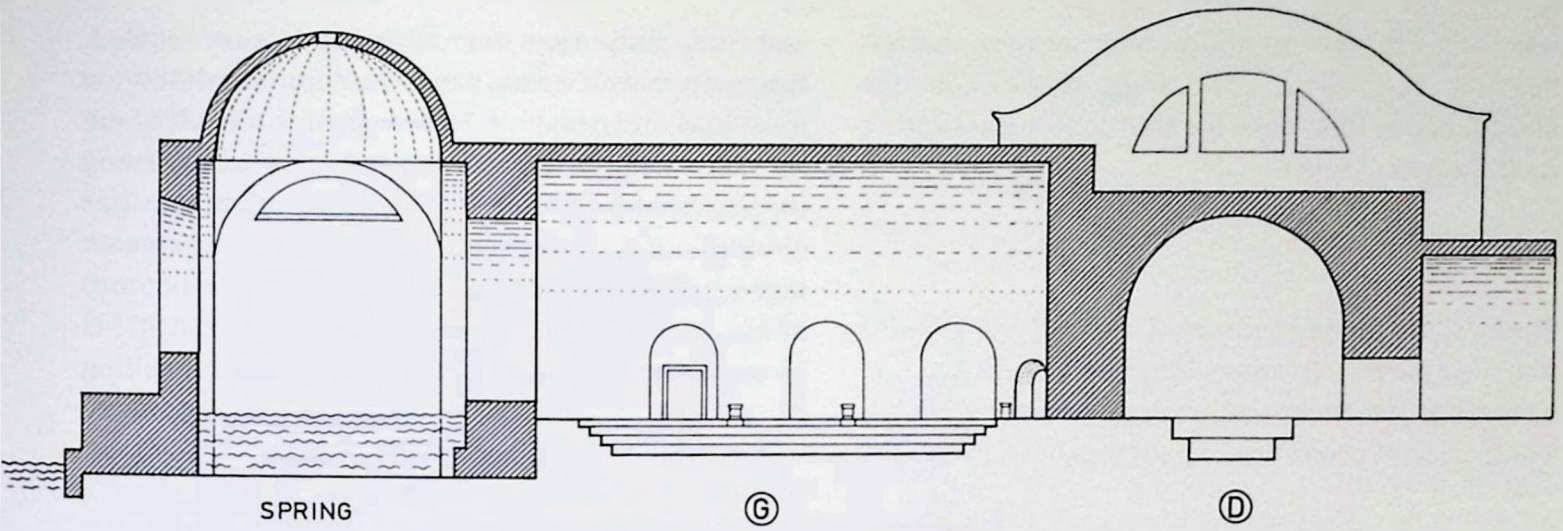


Fig. 263. Cross section of the spring and the hall east of the spring (Area G), and the southern wing of Area D.



Fig. 264. Dome preserved in the *caldarium* of the bathhouse at Bostra (courtesy of the Israel Antiquities Authority).

least. This is ca. 3 m higher than the spring of the vault in neighboring Area A, thus allowing for the installation of a window beneath the arch. The dome towered above the four arches around the spring. Such domes were built at other bathhouses. The bathhouse at Bostra has a similar stone dome with a round opening for light in its center (*oculus*), this being a common feature in domed buildings of the Roman period (Fig. 264). Another source of light were the windows, whose possible location

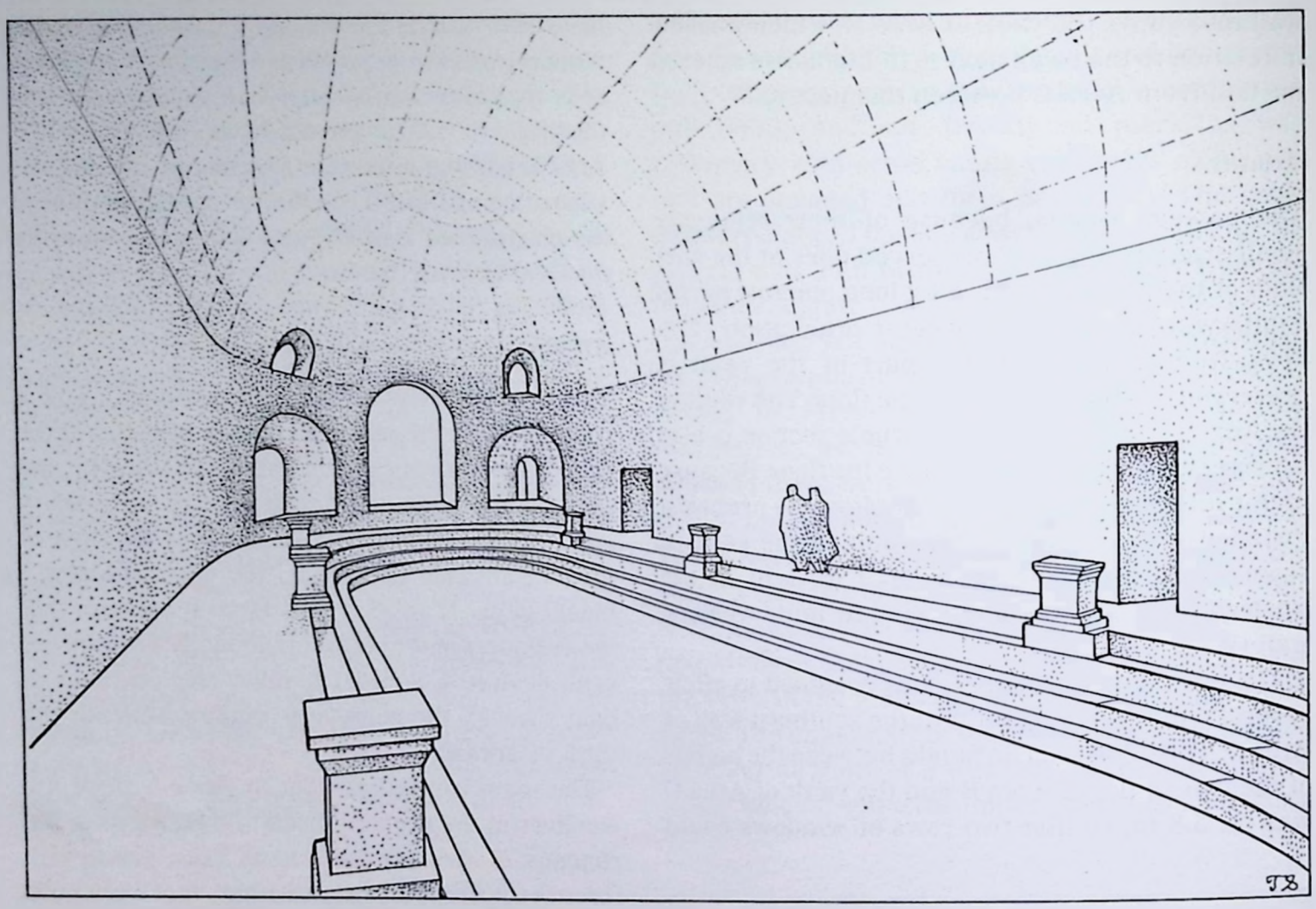


Fig. 261. Reconstruction of the interior space of Area A.

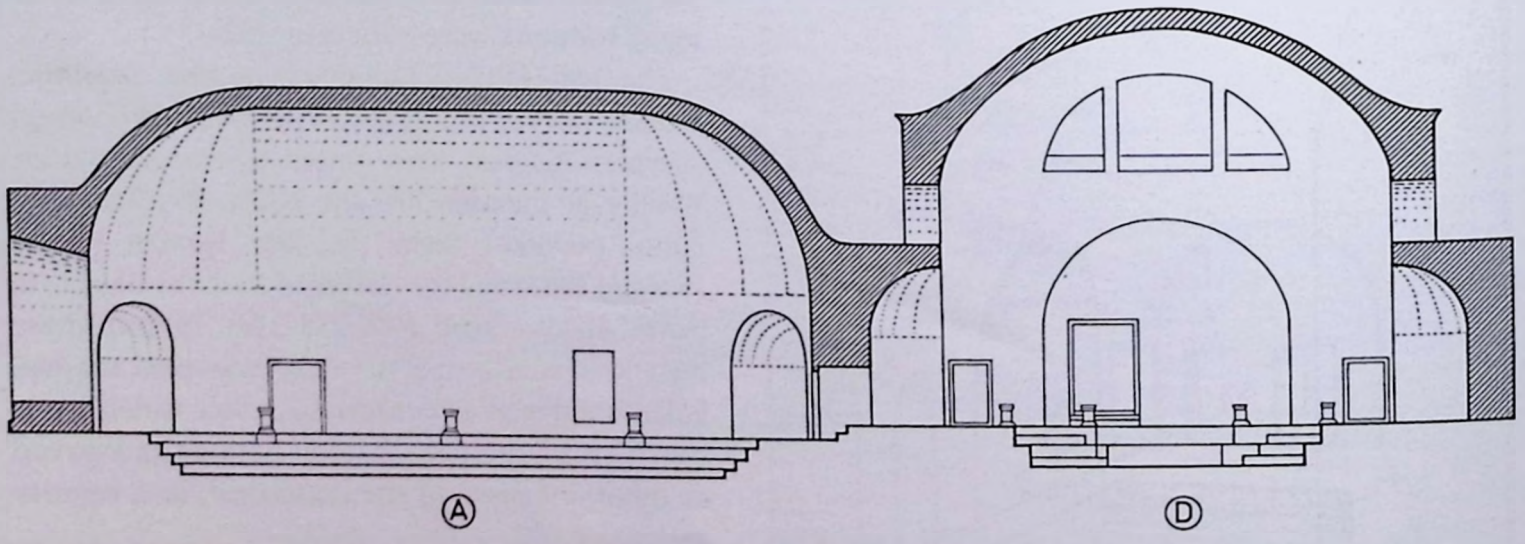


Fig. 262. Cross section along the length of Area A and across the width of the central part of Area D.

was flanked on three sides by units with high ceilings. Only on the south could there have been a lower ceiling which would allow for the installation of windows along the southern long wall (W54).

The area of the spring could have been roofed with a dome. Four corner pilasters integrated in the walls around it, and the four arches between them, could have served as supports for this dome. Between the two northern pilasters, an entire section of an arch was preserved next to the wall north of the spring. The arch's spring is 4.7 m above the floor and thus its estimated height is 8.3 m, at

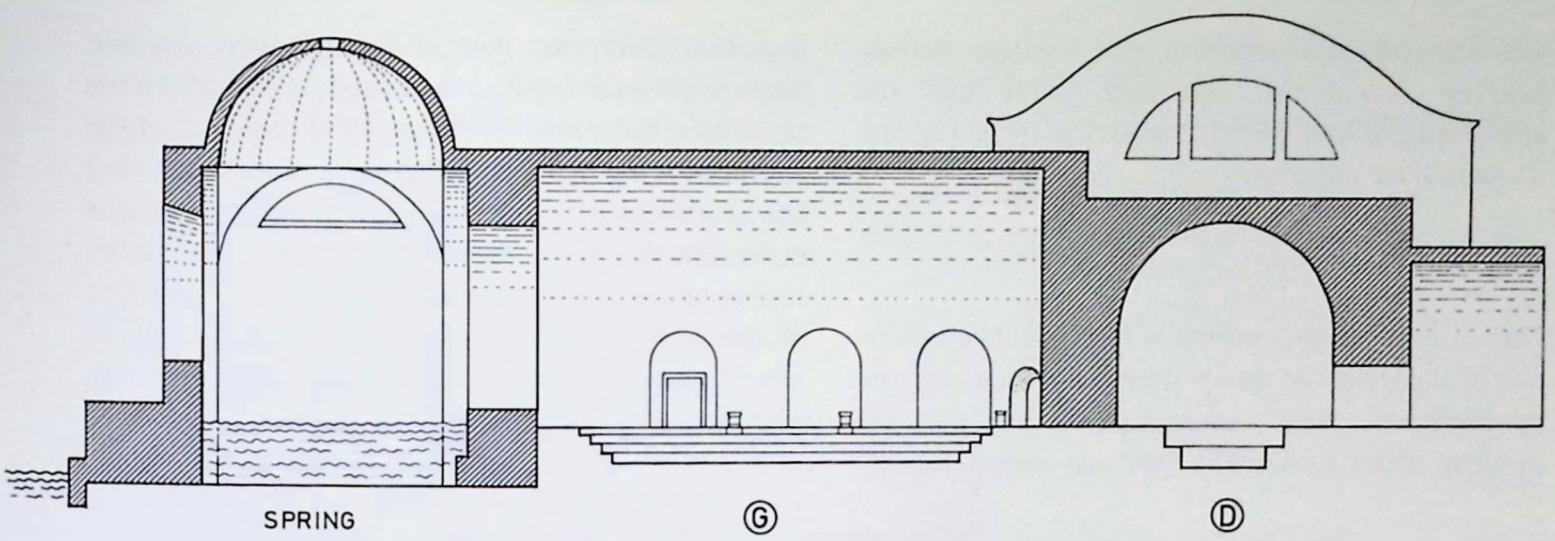


Fig. 263. Cross section of the spring and the hall east of the spring (Area G), and the southern wing of Area D.



Fig. 264. Dome preserved in the *caldarium* of the bathhouse at Bostra (courtesy of the Israel Antiquities Authority).

least. This is ca. 3 m higher than the spring of the vault in neighboring Area A, thus allowing for the installation of a window beneath the arch. The dome towered above the four arches around the spring. Such domes were built at other bathhouses. The bathhouse at Bostra has a similar stone dome with a round opening for light in its center (*oculus*), this being a common feature in domed buildings of the Roman period (Fig. 264). Another source of light were the windows, whose possible location

was beneath the southern and western arches bearing the dome. The high dome and the abundance of light gave the source of the hot spring its grandiose aspect.

Area D

Data relating to the ceilings of the Hall of Fountains are also partial. At many stages of discussion and research, we were inclined to assume that the central, wider part of the pool was open to the sky and that only the narrow wings were roofed. Presently, however, we are of the opinion that it too must have been roofed. Remains of the vault of the southern wing offer us conclusive data regarding the height of its ceiling – 6.7 m above the floor. It is clear that the ceiling of the central part was much higher and began somewhere above the semidomes of the central alcoves (Fig. 265). Apparently, its height was close or identical to that of the ceiling of Area A, i.e., ca. 11 m. Large windows were probably built above the vaults of the narrow wings.

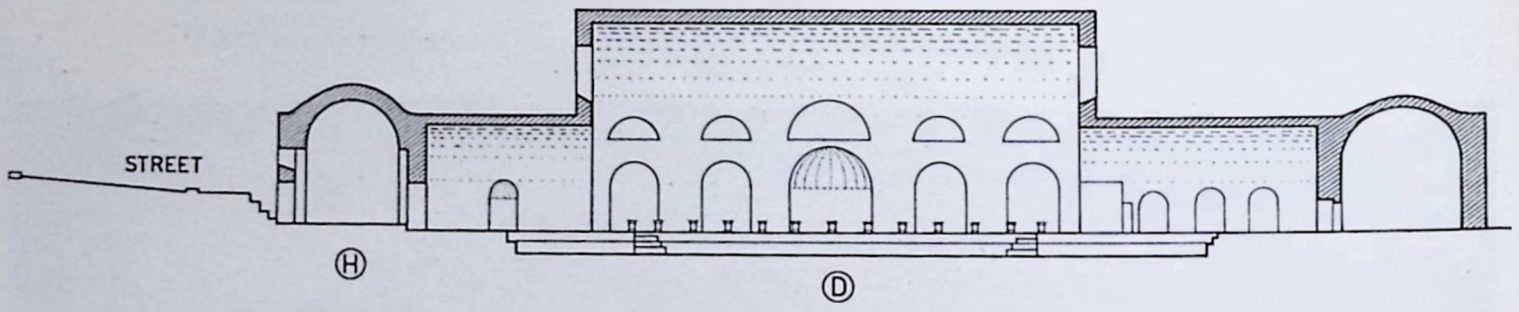


Fig. 265. Cross section along the length of Area D and across the width of Area H.

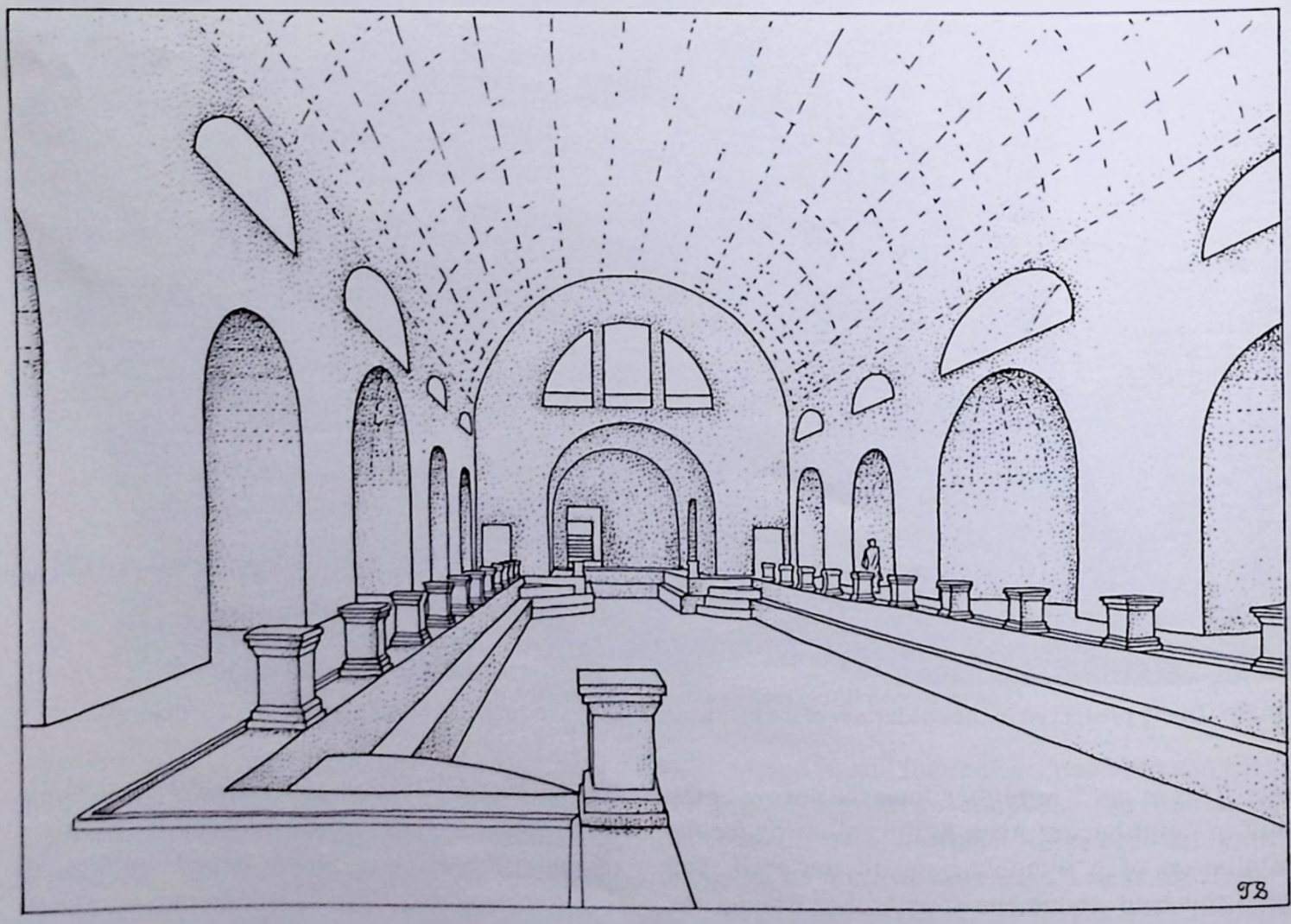


Fig. 266. Reconstruction of the interior space of Area D, looking north.

Another source of light was apparently a row of windows in the upper part of the long walls, most probably placed above the alcoves (Fig. 266). The central part of Area D was therefore well lit. In contrast, it appears that the lower side wings were relatively dark. The only possible source of light in these wings was from the central part of Area D.

The hall of Area D was one of the most impressive in the Hammat Gader baths. The central pool, wider in its center and narrower in the wings, creates an optical illusion of telescopic depth, similar to that in the large *frigidaria* in the baths in Asia Minor (Yegül 1992:122-124). The Hall of Fountains at Hammat Gader appears to have functioned as a kind of *frigidarium*, in addition to Area C (Hall of Piers). As mentioned above, the bathers were able to progress eastward from Area D to the *palaestra* and the dressing rooms (*apodyteria*) which were probably located in the eastern part of this huge complex.

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CHAPTER 2

THE COLUMNED PORTAL

Hannah Hirschfeld

The most outstanding and beautiful element at the Hammat Gader baths is without doubt the columned portal in Area C; its construction was intended to embellish the large space of the Hall of Piers.

The portal is composed of two engaged pilasters, between which stood two columns on square pedestals and Attic bases. The columns are crowned with Corinthian capitals. An arcuate lintel comprised of decorated architraves rests on top of the pilasters and columns.

The entire portal is of high quality and built of local basalt. The fact that the columned portal was renovated after the original phase of the hall's construction is evident from the distinct architectural seam at its western end, between the western pilaster and the large pier west of it (Fig. 1).

Only the lower parts of the columned portal were preserved *in situ*, i.e., the column bases, the pilaster bases, and the lower half of the column shafts attaining a height of 2.8 m. All of the other parts, i.e., the upper half of the shafts, the capitals, and elements of the arcuate lintel, were found lying on the late floor south of the columns (Fig. 2). From this we learn that the movement caused by the earthquake that toppled the entire structure, including the columned portal, was from north to south.

The only element that was not found in the excavation was the capital that rested on top of one of the engaged pilasters. It was thus possible to reconstruct the columned portal with precision.

The portal was erected at the entrance to the southern part of the Hall of Piers. Three steps were laid as a foundation for the portal. The pedestals of the columns, 0.9 m wide, rest on the upper two steps. The columns are 2.4 m apart, while the space between them and the side pilasters is 1.9 m.



Fig. 1. The columned portal, looking north.

The columns have Attic bases (Figs. 3, 4). The bases of the pilasters have a kind of Attic profile (Fig. 5); three courses of the western pilaster and only one of the eastern pilaster were preserved *in situ*. The width of the pilasters at their bases is identical to that of the column pedestals, i.e., 0.9 m. However, their length varies: the western pilaster is shorter, 0.6 m, while the eastern pilaster is 1.1 m long. At a later phase, deep, roughly hewn grooves were carved into both sides of the bases of the columns and the pilasters, apparently in order to install a partition of some sort to separate the



Fig. 2. Parts of the columned portal as found in the excavation, looking northwest.

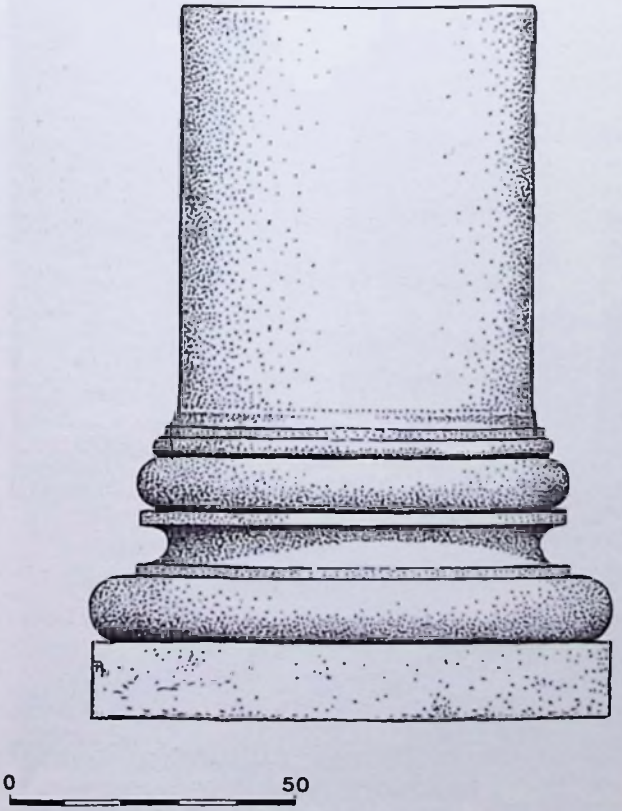


Fig. 3. Column base.



Fig. 4. Column base and pedestals, looking north.

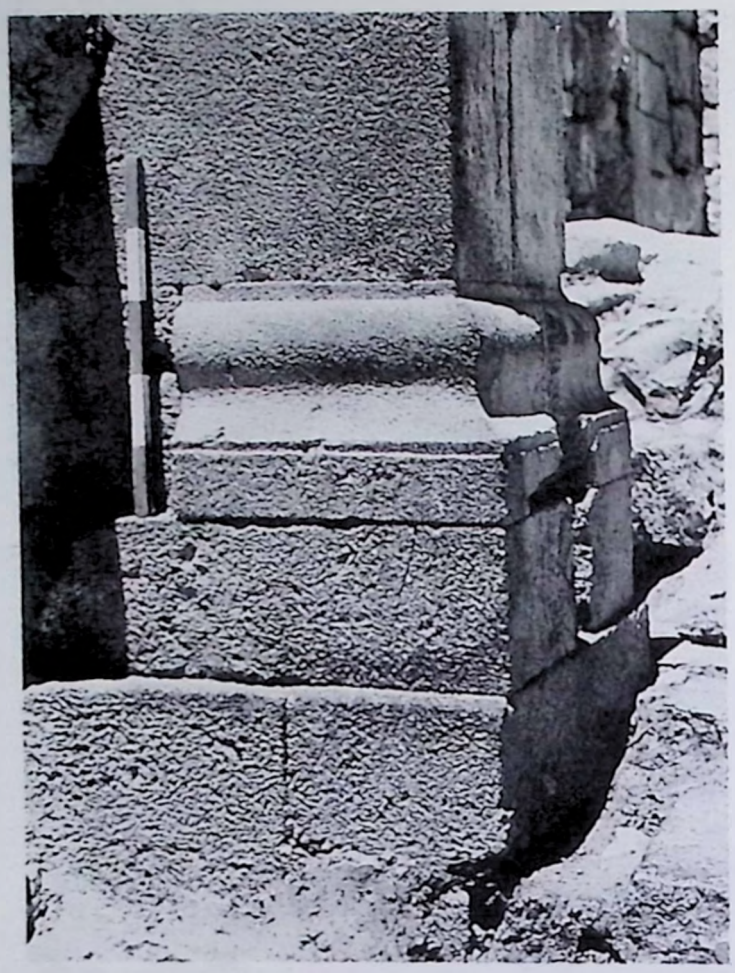


Fig. 5. Engaged pilaster base, looking north.

northern part of the hall from the southern part (Fig. 6).

The full height of the columns, including the upper part of the shafts, is 5.3 m. The columns are crowned with Corinthian capitals differing from each other in style and date.[1] One capital is decorated with two rows of acanthus leaves (those in the upper row are partially broken) emerging from cauliculi, a calyx in the shape of a goblet, a helix, and volutes. On one side of the abacus the flower was replaced by a heart (Fig. 7). The slight contact between the leaves and their sparse arrangement are characteristic of an earlier stage in the development of the Corinthian capital in Palestine during the second-third centuries.[2] This capital is in secondary use, as indicated by carved depressions on its top, which once held a statue (Fig. 8).

The other capital is decorated with a dense arrangement of two rows of acanthus leaves and calyxes (Fig. 9). The helix and the volutes are attached to the abacus, on which is carved an acanthus leaf. The capital is characterized by rather broad acanthus leaves; the prima folia of acanthus leaves touching each other create triangles in which sharp transitions from light to shade contribute to the geometric impression. This capital may be dated to the end of the third-beginning of the fourth century.[3]

The capitals of the side pilasters are similar to the bases and are carved with precision and simplicity (Fig. 10). One of them, as mentioned, was missing and was carved anew for the purpose of the portal's reconstruction. The top of the entablature stones is unadorned and very roughly hewn, most probably because it was not visible. The lintel is decorated on both sides with various motifs: on the side facing the southern part of the the Hall of Piers, its lower part is adorned with a fluted pattern containing small arches and small hemispheres between the fluting (Figs. 11-14). The upper part (cyma) is decorated with alternating palmettes and acanthus leaves. The other side of the lintel is divided into three parts: the lowest part has a decorated band with a fluted pattern containing arches; the arched part of the lintel is only partially



Fig. 6. General view of the columns as found during the excavation, looking northwest.



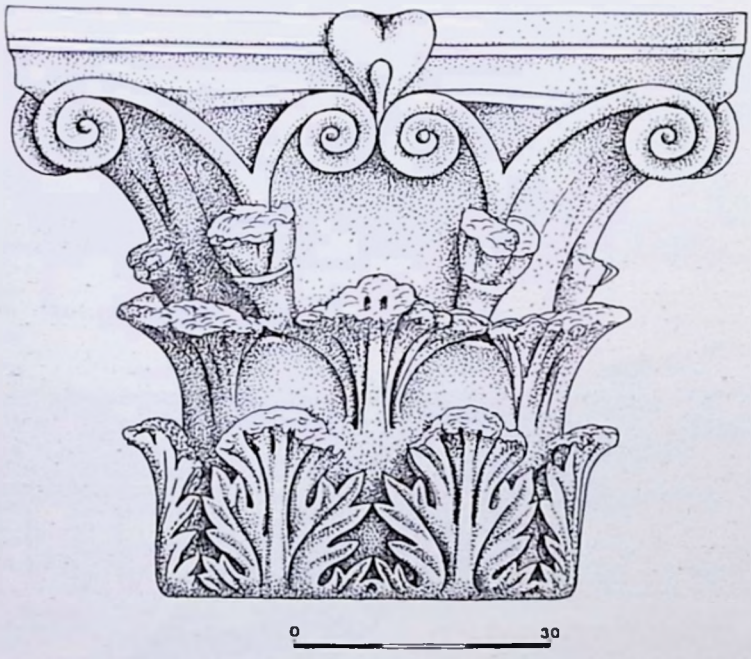


Fig. 7. The earlier capital.

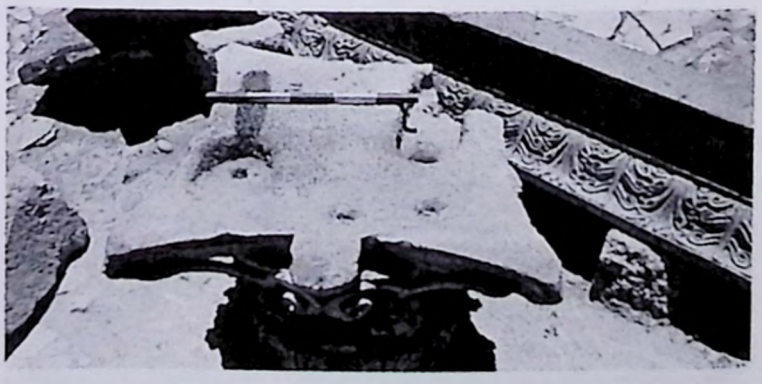


Fig. 8. Depressions on top of the earlier capital.



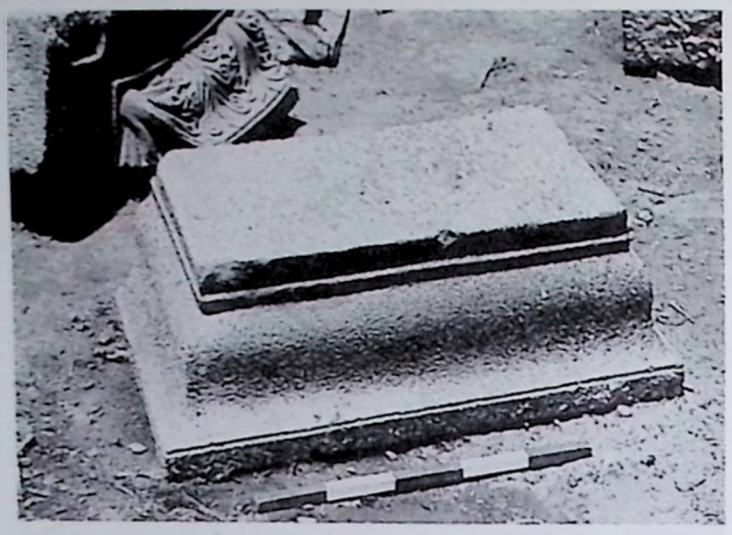


Fig. 9. The later capital.

fluted (Figs. 12, 15), and the middle part is decorated with a double meander pattern populated with floral motifs or with figures that have been defaced. The upper part (cyma) is undecorated. The motifs populating the double meanders will be described from west to east:

Between the western pilaster and western column: two animals (defaced), a composite flower, an eight-petalled rosette, two animals (defaced), a composite flower, and a four-petalled rosette.

The Arch: acanthus leaves, whirling rosette, rosette with five heart-shaped petals, knot of ivy leaves, knot of olive leaves (Fig. 16a), rosette with five heart-shaped petals (Fig. 16b), leaf pattern (on keystone), ten-petalled rosette, knot of ivy leaves facing sideways (Fig. 16c), eight-petalled rosette (destroyed), four-petalled rosette, five-petalled rosette, whirling rosette (Fig. 16d), and an acanthus leaf (Fig. 16e).



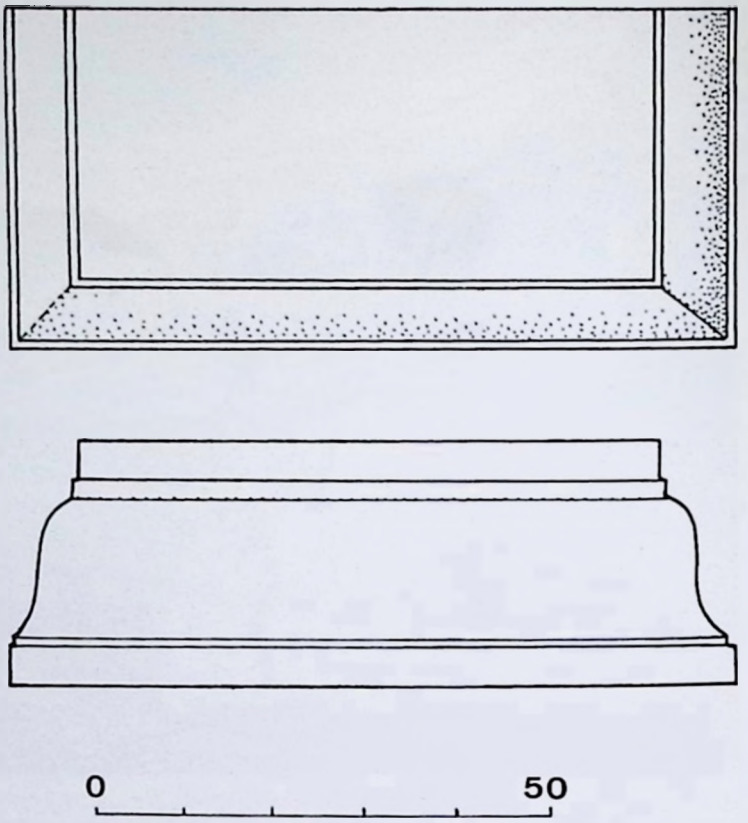


Fig. 10. Pilaster capital.

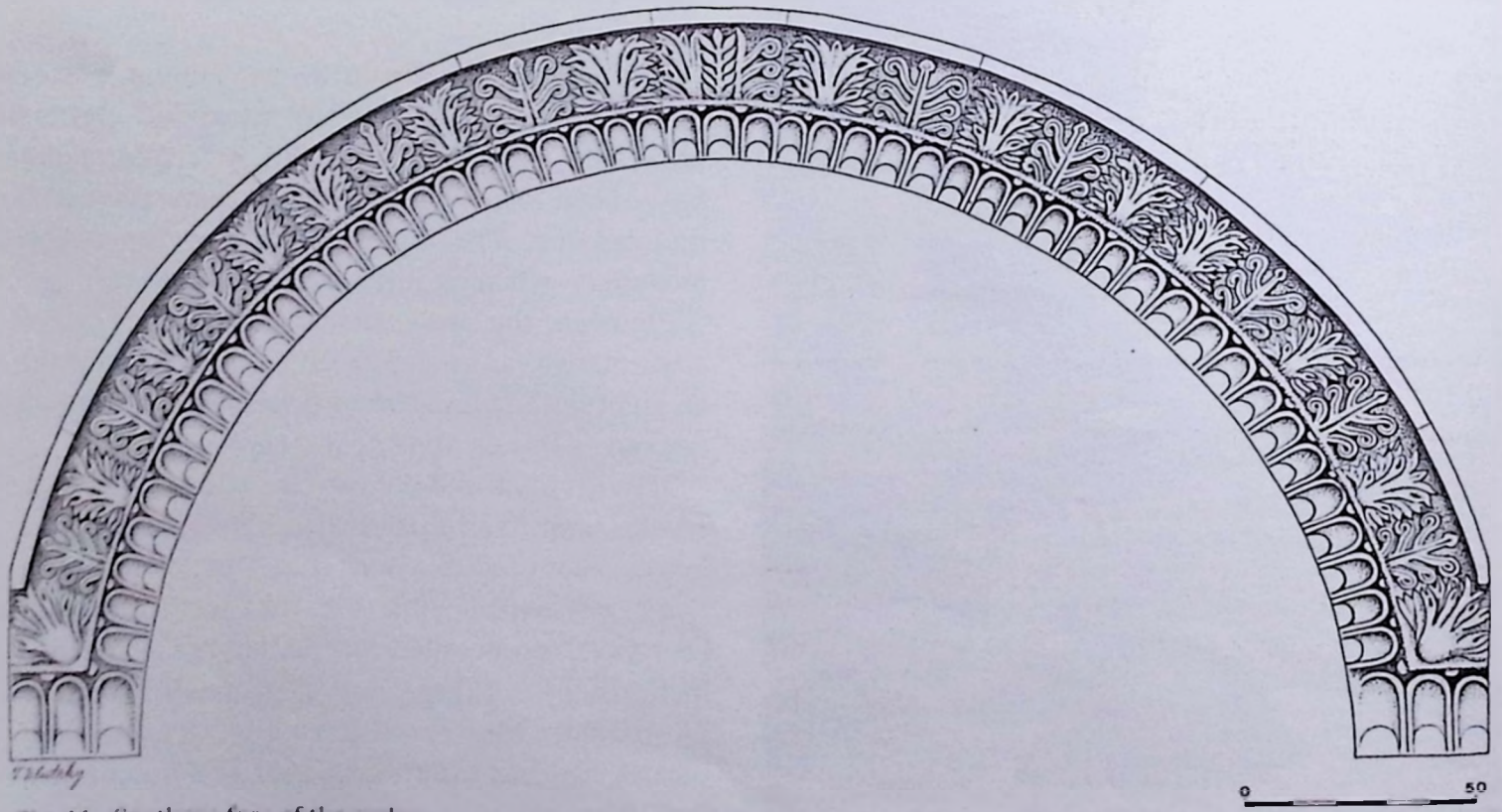


Fig. 11. Southern face of the arch.

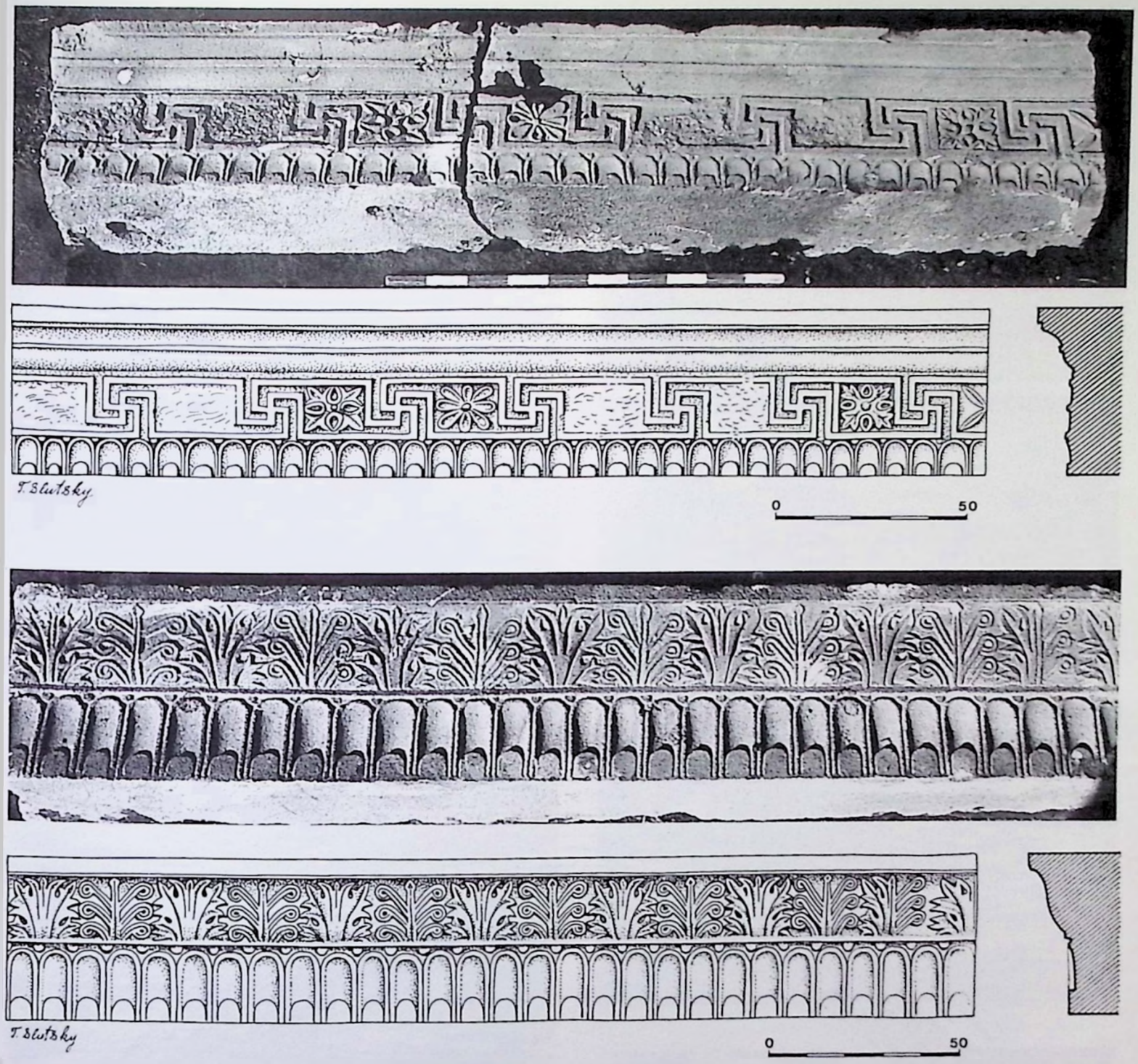


Fig. 12. Lintels, general view and detail.

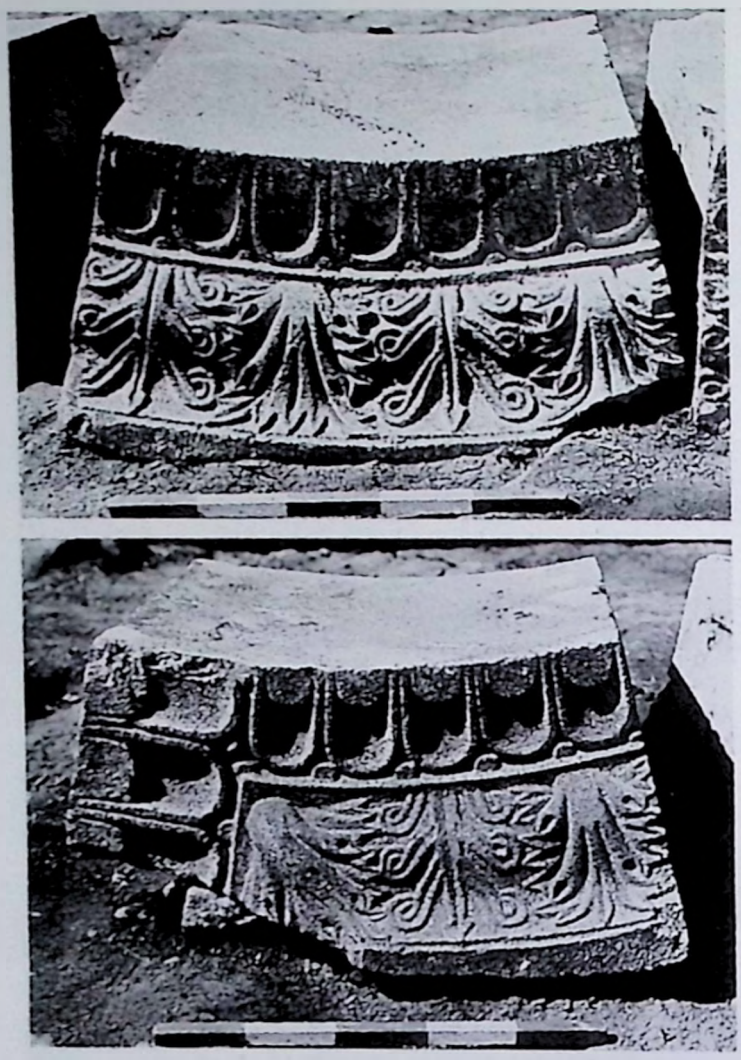


Fig. 13. Arch, details.



Fig. 14. Keystone of the arch.

Between the eastern pilaster and eastern column: four-petalled rosette, composite flower (Fig. 17a), two animals (defaced), eight-petalled rosette (Fig. 17b), composite flower (Fig. 17c), and two animals (defaced).

The conservative style characteristic of the stone-sculpting in southern Syria renders the dating of this lintel difficult.

A stylistic analysis of the elements found at Hammat Gader is difficult because of the use of standard motifs. The palmettes and acanthus leaves on the cyma are almost flat (worked in low relief) and placed next to one another without



Fig. 15. Northern face of the arch.


a


b


c


d


e

Fig. 16. Arch, details.

overlapping. In contrast, the fluted patterns of arches and the populated double meanders create a three-dimensional effect. The motifs populating the meanders fill the entire space and the background is not visible. The graduated heights in the reliefs of a number of motifs create subtle light and shade transitions which contribute to the sense of plasticity.

A similar decoration, a double meander motif with floral elements, appears in the Hauran on

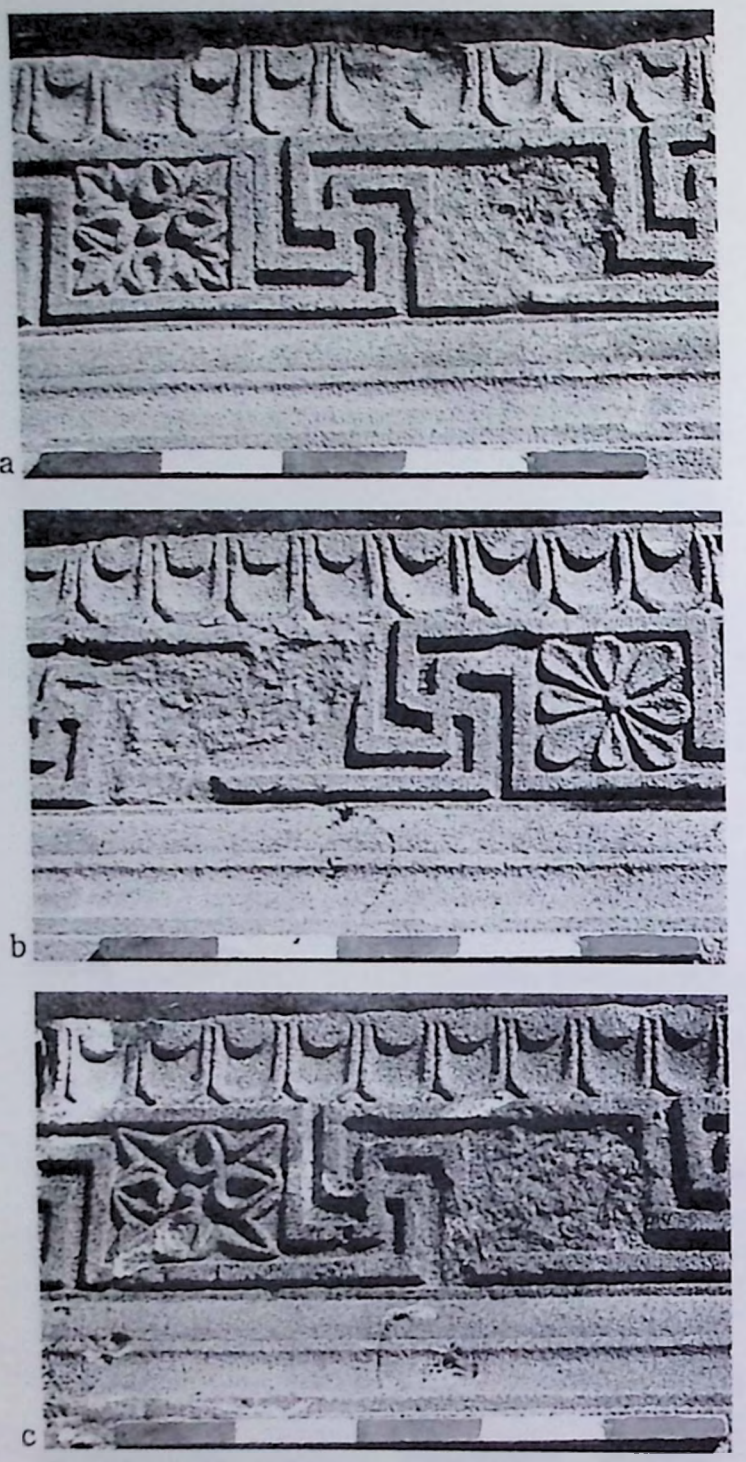


Fig. 17. Lintel, details.

monuments dated to different periods. In the Tycheion at es-Sanamen, dated to 191 C.E.,[4] there is an arcuate lintel above a niche in a wall; it has a double meander pattern with floral and figurative decorations in panels. The populated meander, together with the figurative motifs in its panels, is also widespread in second-century architecture.[5]

The motifs appearing in the architectural decoration at Hammat Gader, such as the double meander, were widespread in southern Syria from the second to the fourth centuries C.E.

CONCLUSION

The columned portal is a monumental element within the Hammat Gader baths complex. The quality of the construction and the high level of workmanship of the basalt stonecarvings are testimony to the high professional skills of the baths' builders.

The dating of the structure is a moot issue. On the basis of parallels from the Hauran, it is to be dated to the second half of the second century C.E. We may thus conclude, according to its architectural context, that it was erected in the second century, i.e., when the baths complex was being built.

It appears that the columned portal had two stages of existence. The first stage began with the erection of the baths complex at the end of the second century C.E. The second stage is marked by the reconstruction of the columned portal some time in the fourth century C.E., perhaps following damage caused by an earthquake. This is evident from the late capital, which dates this stage to the fourth century C.E., at the latest.

The iconoclastic activity, i.e., defacement of faunal figures in the populated architrave, indicates that the columned portal remained in use until the first half of the eighth century, when the complex was destroyed by a great earthquake in 749 C.E. The columned portal thus existed for ca. 550 years, with a stage of repair or reconstruction some time in the fourth century.

NOTES

1. M. Fischer, The Corinthian Capitals of the Capernaum Synagogue – A Late Roman Architectural Feature in Eretz-Israel, *EI* 17 (1984):305 (Hebrew).
2. Idem, *The Development of the Corinthian Capital in Palestine since its Inception until Constantine the Great* (doc. dissertation; Tel Aviv, 1979), p. 151.
3. Ibid., p. 274. The face of this capital is covered with junctions between most of the small leaves in the prima and secunda folia. R. Kautzch (*Kapitellstudien* [Berlin, 1936], pp. 98-100, Fig. 284) dates it to the fourth century.
4. H.C. Butler, *Ancient Architecture in Syria*, Section A, Part 5 (Leiden, 1915), p. 320 (Ill. 292, Pl. XIX); its dating is based on the inscriptions found at the site.
5. J.M. Dentzer (ed.), *Hauran*, I (Paris, 1985), pp. 287-288.

CHAPTER 3

THE GREEK INSCRIPTIONS OF HAMMAT GADER

Leah Di Segni

Between sixty and seventy Greek inscriptions were found in the ruins of the baths complex. Many are complete and fully legible, some are only partially preserved, while others are mere fragments. A number of texts were engraved on marble plaques set in the walls or inserted in the floors; most were simply incised on the flagstones that paved the floors of the halls or the pools. Only a few fragments of inscriptions painted or scratched on plaster were discovered: these are all that survived of graffiti inscribed on the walls by visitors wishing to be remembered. Their appearance, however, helps us to understand the circumstances under which most of the inscriptions in the baths originated. Except for a small group of dedications, which are linked either by their content or their location to phases in the development of the building, all the other texts were dictated by private persons on the occasion of their visit to the site – a visit that inspired wonder and gratitude in the presence of the healing powers of the baths. The inscriptions are the immediate expression of these feelings. However, the overwhelming majority of them were not inscribed by the visitors with their own hands; on the contrary, the quality of the engraving indicates the intervention of a stonecutter and the use of chisels or other professional tools. The inscriptions must have been dictated to local artisans, who engraved them in situ on the flagstones of the pavements; presumably, permission to have the commission carried out was paid for by the visitor by means of an offering to the 'holy place' – as the baths complex is described in most texts. It follows that, save for the above-mentioned group of dedications, the inscriptions have no direct chronological relation with the building, except for the fact that all must be later than the floors on which they were incised. As we shall see, although in some cases stones in secondary use were inserted in the floors, the setting of the inscriptions on the stone surface shows that they were all executed when the slabs were already in place.

Most inscriptions at Hammat Gader open with the words: Ἐν τῷ ἁγίῳ (or ἱερῷ) τόπῳ μνησθῇ... The formula μνησθῇ ὁ δεῖνα is very common all over the East in Late Roman and Byzantine inscriptions from a pagan, Jewish and Christian milieu. It generally appears in connection with holy places: temples, synagogues and churches, pilgrimage sites and pilgrim routes. The use of this formula, not to speak of the words ἅγιος τόπος, indicates that the baths were viewed not as a pleasure resort or a sporting site consecrated to hygiene and body care, but as a healing place endowed with a God-given power of restoring health. To be sure, a change had occurred in the approach to bathing, and specifically to bathing in the mineral water of these springs, from fourth-century attitudes known to us from the sources, to the fifth- and sixth-century way of thinking that is reflected in these inscriptions. The Church Father Epiphanius (*Haer.* 30, 7-8: 342-343) described Hammat Gader as an abode of wantonness and black magic, where the fashion of bathing to ward off illness or to cure it was abused by unscrupulous people for their own ends, to the detriment of morals. On the other hand, the pagan philosopher and historian Eunapius (*Vitae Sophistarum*: 459) provided a colorful picture of the hot springs as a place for relaxation and intellectual pleasures. The difference was, of course, in the eyes of the beholder: but what both the moralist and the Sophist described and reacted to in the late fourth century was in essence a pleasure resort. When the empress Eudocia visited Hammat Gader in the mid-fifth century, she was more concerned with its beauty than with its healing powers (see No. 49): but this was probably the result of her classical

education and of the literary form she chose for her tribute. Her humbler contemporaries voiced their impressions in terms befitting pilgrims to a holy place, rather than visitors at a spa. Likewise, later governors who restored parts of the building expressed their concern with the healing of the sick in the dedications affixed to their works (see Nos. 50, 54).

This change of attitude developed under the influence of Christian ethics. The Church viewed with suspicion the habit of mixed bathing – not only for the sake of modesty, but also because of the dictates of ascetic behavior. Among the innumerable examples, one may mention the case of the virgin Silvia, who during a pilgrimage to Egypt reproached a fellow-traveller for having washed his face and feet after the day's journey; for her part, the holy woman never washed more than her fingertips (Palladius, *Historia Lausiaca*, 55, 1: 148-149).[1] Under this kind of moral pressure, the Church admitted bathing only as a medical measure.[2] This approach, far from charging the baths with the prosaic atmosphere of a sanatorium, placed the hot springs of Hammat Gader in the class of hallowed waters endowed with supernatural healing powers. The sixth-century visitor known as Antoninus of Piacenza (*Itinerarium* 7: 132) called the place *thermae Heliae* and described the lepers' *incubatio* there. This frame of mind is reflected in the inscriptions too.

The inscriptions will be described in topographical order, starting from the halls at the entrance of the building (Fig. 1). At present most of the inscriptions are not in *situ*, but either at the Israel Museum or in the Israel Antiquities Authority's storehouse in Romema, Jerusalem.

Inscription 1 (Figs. 2-3)

Slab of gray marble set in the center of the pavement of Area C.
Presumed date: 455 C.E.
Meimaris 1983: 393; Di Segni and Hirschfeld 1986: 266, n. 65; Feissel 1987: 377-378, no. 520; *SEG* 36, no. 1343; Di Segni 1992: 311-312, 321, Fig. 3.

The inscription is carefully carved with a sharp instrument on a slab 98 cm high, 110 cm long and 5.5 cm thick. The plaque was framed by two rows of small red cubes and the whole was inserted in a pavement of square stones, each measuring 23×23 cm, laid in diagonal rows. The inscription faces the entrance and is set in the exact center of the room (Fig. 2): this location indicates its connection with the laying of the pavement in Area C.

The text consists of six hexameters, each verse occupying a whole line. The lines are 100 to 104 cm long. The script is calligraphic; the characters belong to the oval alphabet and average 5.5 cm in height. The slab was broken in situ and the beginning of the last four lines is missing. Only one letter is lacking in l. 3, whereas lines 4, 5 and 6 show gaps of different lengths in which the characters have either completely disappeared as a result of the breaking off of a piece of marble, or have been partly deleted by cracks and wear of the stone surface. However, some traces of the missing letters still survive, enabling us to reconstruct the text, at least tentatively, with the help of meaning, grammar and metric rhythm. No abbreviation or punctuation marks are used.

ΜΗΚΕΤΙΤΑΡΒΟCΕΧΟΙΤΕΛΟΕΤΡΟΦΟΡΟΥΑCΑΜΙΝΘΟΥ
ΟΥΛΟΜΕΝΗCΗΜΥΡΙΑΠΟΛΛΟΙCΑΛΓΕΕΘΗΚΕΝ
. ΝΔΡΑCCΙΝΟΜΕΝΗΚΤΕΙΝΟΥCΑΤΕΠΟΛΛΑΚΙΠΑΙΔΑC
4 . . . . . CΓΑΡΥΠΕΡΘΕΝΟΛΗΝΚΑΤΕΧΩCΑΤΟΓΑΙΗ
. . . . . ΑΔΕCΤΟΡΕCΑCΦΙΛΟΠΑΙΓΜΟΝΑΘΗΚΑΤΟΧΩΡΟΝ
Ν. . . . . ΘΙΔΟΥCΤΕΡΨΙΜΒΡΟΤΟΝΕΛΚΕΜΕΝΥΔΩΡ

Μηκέτι τάρβος ἔχοιτε λοετροφόρου ἀσαμίνθου
οὐλομένης, ἣ μύρια πολλοῖς ἄλγε' ἔθηκεν,
[ἄ]νδρας σινομένη κτείνουσά τε, πολλάκι παῖδας'
4 [ἡ τ' ἀχανὴ]ς γὰρ ὑπέρθεν ὅλην κατεχώσατο γαίη.
[Ἄνδιχ]α δὲ στορέσας φιλοπαίγμονα θήκετο χῶρον
Ν[ικᾶς ?, ἄλλο]θι δοὺς τερψίμβροτον ἑλκέμεν ὕδωρ.

L. 4 Meimaris gap; Feissel ⏑ – ⏑⏑ – L. 5 traces of H or I and X; Meimaris χώματ]α, which does not fit the remains L. 6 Meimaris πηγὰς τ' ἔκτο]θι: the sentence thus remains without a subject. Meimaris ascribes both the epigram and the building to Eudocia: she would be the unexpressed subject. *Contra* Di Segni and Hirschfeld. *Contra* also Feissel, who points out that the participles in ll. 5-6 presuppose a subject of masculine gender and suggests the restoration at this point of the name of the man who restored the baths. The first letter is fairly recognizable as N, the second as I or Y; then, after a gap, A and C can be made out, followed by three angular tops suggestive of either A or Λ, and a final gap. The meter requires the sequence [– ⏑⏑ – ⏑]⏑.

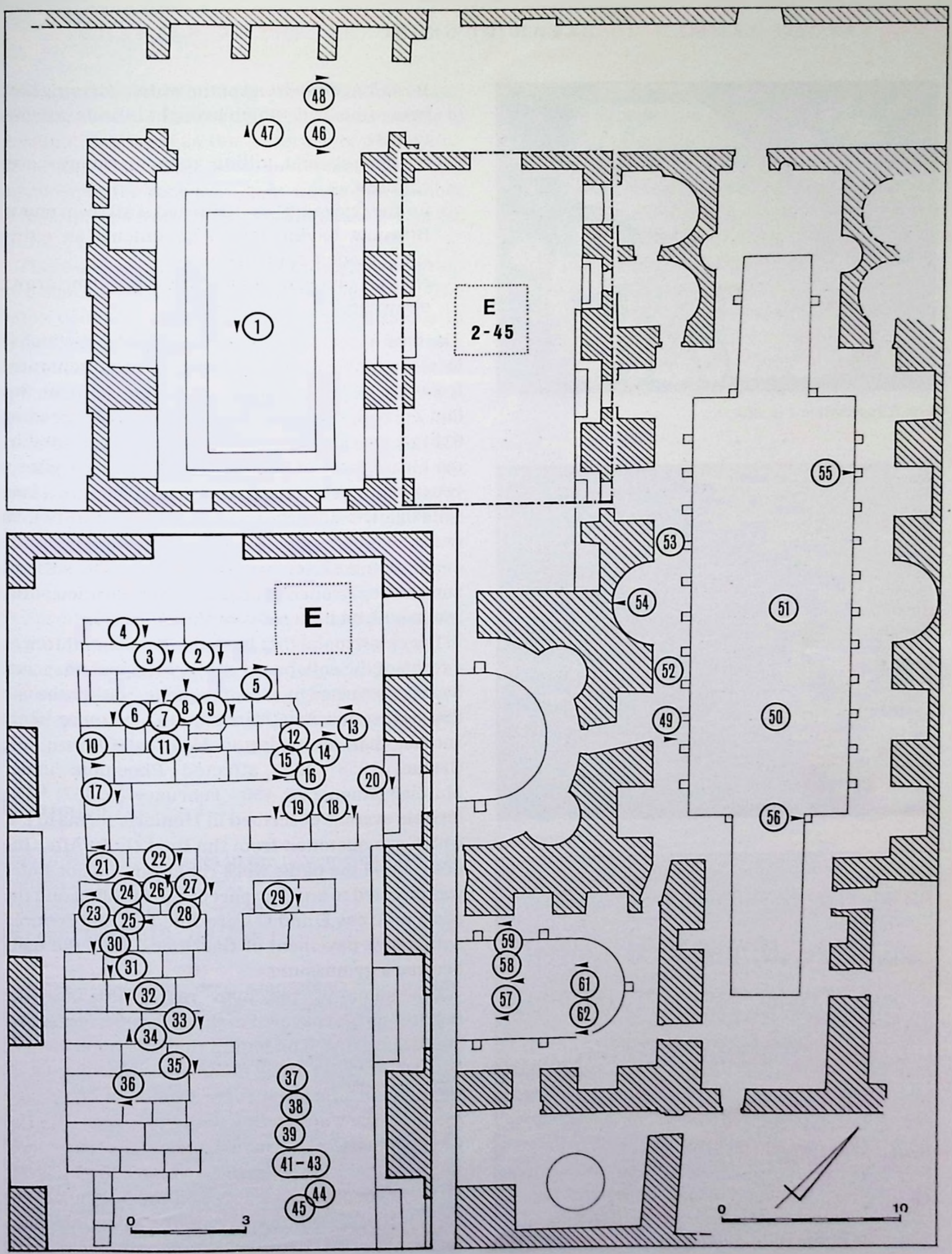
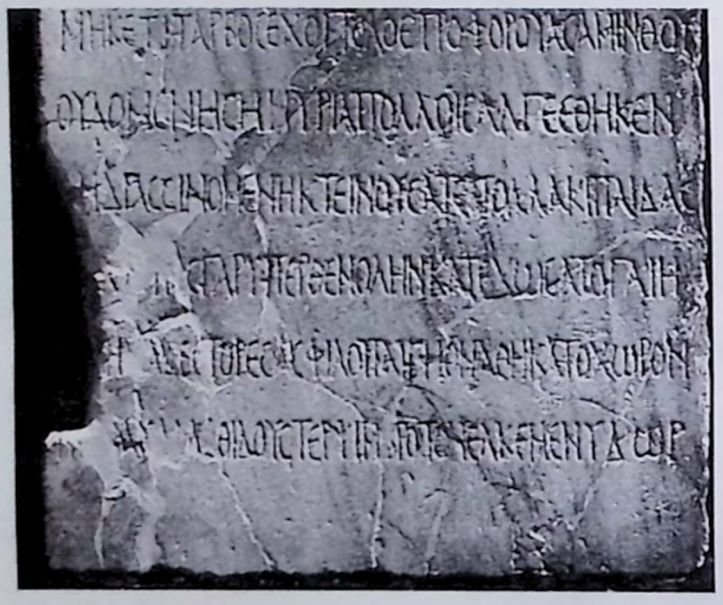


Fig. 1. Plan of the baths complex with location of inscriptions; arrows show the orientation of each inscription.



Fig. 2. Inscription 1 in situ.



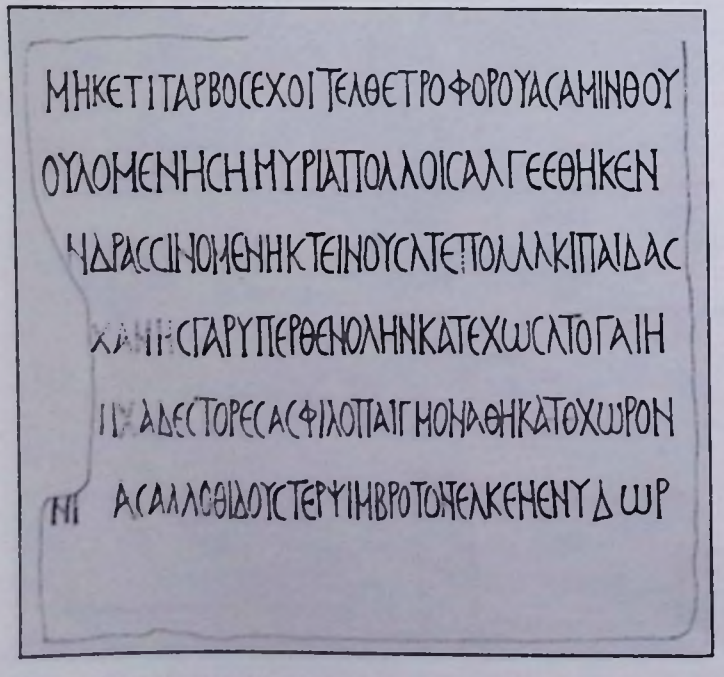


Fig. 3. Inscription 1: photograph and drawing.

Be no longer in dread of the water-carrying bath being smashed, which brought infinite sorrows to many,
by hurting and killing men, in many cases children,
for the [yawning] earth buried it all from above.
But now, having laid a pavement [on either side], made a sporting place
Nikas (?), having let pleasant water to be drawn elsewhere.

The date of this text is provided by No. 2, which is located at the entrance of Area E: this is separated from Area C by pilasters, and the pavement was laid on both sides of this partition. The reading ἄνδιχα, possibly written ἄνδηχα, is suggested by the clear traces of the letters ΗΧΑ or ΙΧΑ after a two- or three-letter gap which must contain a long syllable. The adverb, meaning 'divided in two, in twain,' emphasizes the fact that, although the inscription was set in the center of the western wing, the epigram referred to the restoration of the whole hall, on both sides of the pilasters.

The catastrophe that buried men and children as a result of the collapse of the former pool, may well have been caused by an earthquake,[3] either the one that devastated Asia Minor in 447, or more likely another that, according to Malalas (*Chron.*: 367; Grumel 1958: 477) affected Phoenicia under Marcian (August 25, 450 - February 26, 457).[4] The terrible event is described in Homeric terms in l. 2, which is a quotation from the Iliad (I, 2). After the destruction the baths were repaired; the hot water was directed to another part of the building and the pools in Areas E and C were filled up and covered with a new pavement of flagstones: thus the halls became a gymnasium.

The name of the man responsible for the restoration is concealed in the gap at the beginning of the sixth line. The letters that can be made out, N . . AC, are part of his name, and -ας must be its termination, otherwise there would not be enough space for the word ending with the letters -θι. The desinence -ας is long, which makes the first foot of this hexameter a spondee. The names that answer all these conditions are few, and the commonest of them is Νικᾶς.[5] Νικᾶς may also be a poetic licence for Νῑκῐᾶς, Νῑκαῐ̆ος, which cannot be fit in a hexameter – or only with the utmost difficulty.

Nikas may have been some open-handed citizen who financed the restoration, but it is reasonable to presume that he was the governor of *Palaestina Secunda*. Governors are mentioned as being responsible for reconstruction works in a number of inscriptions from the baths complex: e.g. Nos. 50, 51, 52, 54, 57.

There are no grounds for attributing this epigram to Eudocia, as was suggested by Meimaris. The baths complex contains several compositions in verses, also conceived in a Homeric style, which are much later than the Augusta's time. True, this epigram was apparently composed at a time when Eudocia was residing in the country, but there are many arguments in favor of a date earlier than 455 for her visit (see commentary to No. 49). In any event, even if the empress came to Hammat Gader after the restoration, it is doubtful if she would have consented to celebrate the paving of a new sports area financed by an ordinary benefactor, or even a local governor. There may indeed be a link between Eudocia's visit to Hammat Gader and this text, but only in the sense that the engraving of her poem in honor of the baths, or perhaps its recitation at the site even before the empress' epigram was exposed to the public in the Hall of Fountains, may have prompted others to write in the same style.

Inscription 2 (Figs. 4-5)

Slab of white marble set in the pavement of Area E, in front of the entrance.
Date: September-November 455.
Di Segni 1992: 310, 319, Fig. 1.



Fig. 4. Inscription 2 in situ.

The inscription is set in 14 lines of different length, enclosed in a rhomboid frame, which in its turn is set within a rectangular frame. The marble plaque measures 78×102 cm and is 3.8 cm thick. The longest line of the script is 60 cm long; the height of the letters varies from 2 to 3 cm. The characters are carefully engraved with a sharp instrument and belong to the round Byzantine alphabet. The text began and ended with crosses, which later were obliterated, probably in the Arab period. The only abbreviation sign is a small *stigma*. Of the numerals, only the units digit in the figure indicating the year is marked with a horizontal line.

+	
ΕΝΤΩ	Ἐν τῷ
ΑΓΙΩΤΟΠΩ	ἁγίῳ τόπῳ
ΜΝΗCΘΗ	μνησθῇ
ΜΑΡΚΟCΟΕΞΚΕ	Μάρκος ὁ ἐξκέ-
5 ΠΤΩΡΑΜΑΤΟΙCΥΕΙΟΙC	πτωρ ἅμα τοῖς ὑ{ε}ιοῖς
ΑΥΤΟΥΙΕCCΟΥΩΤΩΚΑΙ	αὐτοῦ Ἰεσσοὺῳ τῷ καὶ
ΘΕΟΔΩΡΩΚΑΙΔΑΝΙΗΛΩ	Θεοδώρῳ καὶ Δανιήλῳ
ΤΩΚΑΙΑΝΤΩΝΙΝΩ	τῷ καὶ Ἀντωνίνῳ.
ΤΟΙCΕΚCΥΜΒΙΩCΕ	τοῖς ἐκ συμβιώσε-
10 ΩCΝΟΝΝΗC	ως Νόννης.
ΑΜΗΝ	Ἀμήν.
ΙΝΔ^{S}Θ	Ἰνδ(ικτιῶνος) θ΄,
ΕΤΟΥC	ἔτους
ΗΙΦ	ηιφ΄.
+	

L. 5 ΥΕΙΟΙC, for ὑιοῖς

> In this holy place may Marcus the scribe be remembered, together with his sons, Joshua also (called) Theodorus and Daniel also (called) Antoninus, (born) from his marriage with Nonna. Amen. Indiction 9, year 518.

The epoch of the era of Gadara was autumn 64 B.C.E.: the precise day is not known, but it fell before December 5 (Stein 1990: 26-28). Year 518 according to this era thus corresponds to 454/5 C.E. The ninth year of the indictional cycle started on September 23, 455.[6] Therefore the inscription was dictated between September 23 and the beginning of a new city year, in late autumn 455.

The slab bearing the inscription is not a regular flagstone, but a carved plaque of white marble, and it is set exactly in front of the entrance (see Fig. 1).



Fig. 5. Inscription 2: photograph and drawing.

Its insertion must have been planned in the course of the paving work itself. Thus it appears to set a date for the new floor that was laid in Areas E and C, covering the earlier pools. The pavement was laid as a unit, and Areas E and C actually form two wings of a twin hall. Therefore the dating of inscription 2 is valid also for inscription 1, which indeed refers to the laying of the new pavement of the sports area 'on either side.' As we shall see, the date of the pavement in Area E is confirmed by another inscription, No. 33.

The *exceptores* were scribes serving in the judicial branch of both the civil and the military *officia*. In the fourth century the *exceptores* rose to the status of civil servants (*officiales*), who could attain the rank of chancellery chief (*cornicularius*), which meant very handsome emoluments and a title on retirement. At that time the *exceptores* were people of some standing, some of them belonging to the class of *curiales* (*CTh* 8.7.17). Their corporations (*scholae*) were authorized by the State to provide chancery services to the public. The pay of these clerks was modest, but their income was largely supplemented by the fees (*sportulae*) paid by the people who required their services. A schedule of fees to be paid to *exceptores* for several chancery services has been recently discovered in Caesarea; it was engraved on marble in the third quarter of the fifth century (as yet unpublished). In the course of the fifth and sixth centuries the field of activity of the *exceptores* was gradually reduced in favor of the *scriniarii*, who took care of financial administration. Their emoluments were fixed by law under Anastasius, who regulated the *sportulae* to be paid to all *officiales* (*CJ* 12,19,12,1; Stein 1940: 50, 71, 221; Stein and Palanque 1968: 74, 463, 729-731, 838; Jones 1964: 497, 565, 583-585, 587-588, 590-591, 594-597; Karayannopoulos 1958: 56-57, 172, 175-176).

Some *exceptores* were attached to the office of the *dux*, others to that of the civil governor. Thus it is possible that Marcus was stationed in the metropolis, Caesarea, or in the capital of *Palaestina Secunda*, Scythopolis.[7] The names of his sons indicate that he was probably a former Jew or Samaritan: both groups had flourishing communities in the two cities, as well as in southern Golan, and both were subject to legal disabilities under Theodosius II's *Novella* III of 438. Conceivably Marcus changed his religion in order to be able to continue his career. He must have enjoyed a good income, if, as we believe, the location of his dedication directly in front of the entrance indicates that he contributed a substantial sum for the paving of the sports area.

Inscription 3 (Fig. 6)

Slab of whitish-gray marble in secondary use, set in the pavement near No. 2, to its west.
Unpublished.

The slab measures 80×55 cm and is 3.8 cm thick.



Fig. 6. Inscription 3: photograph and drawing.

Along the upper edge and the right side of the plaque, a rectangular frame is carved, enclosing another rectangle, with a wavy molded decoration, that continued to the left. The left side disappeared when the slab was cut and reused in the pavement. The stonecutter who engraved the inscription added a left side to the frame, fronting the surviving right part; but his addition, although carefully made, is flat and easily distinguishable from the original.

Within the resulting frame a five-line inscription was incised with a sharp tool. The middle line is 33 cm long, the others are slightly shorter. The characters are regular and average 3.4 cm in height. No abbreviation signs are used. It is likely that the molded plaque was not included in the pavement by chance, but was prepared and inscribed while work in the hall was under way. Then the inscription was placed in a prominent spot near the entrance. This would make it the contemporary of No. 2, and indeed there is a remarkable similarity in the palaeography of the two inscriptions.

In the upper left corner of the slab traces of three letters are visible: ENT, probably a false start for a second inscription beginning with the customary formula Ἐν τῷ ἁγίῳ τόπῳ.

ΕΝΤΩΑΓΙΩ	Ἐν τῷ ἁγίῳ
ΤΟΠΩΜΗCΘΗ	τόπῳ μ(ν)ησθῇ
ΘΕΩCΕΒΙCOCΙ	Θεωσέβι(ο)ς ὁ σι-
4 ΝΓΟΥΛΑΡΙCΚΑΙ	νγουλάρι(ο)ς καὶ
ΠΡΟΚΟΠΙ . C	Προκοπί[α]ς.

L. 5 traces of A

In this holy place may Theosebius the *singularis* be remembered, and Procopia.

Theosebius and Procopia were probably man and wife. ΠΡΟΚΟΠΙΑC is most likely a genitive feminine, not an abbreviation of Προκοπία σ(ύμβιος), as there would have been ample space within the frame for the word σύμβιος. The

genitive can be explained as a transition from a passive construction to an impersonal one ('may remembrance be of..'). The same construction occurs several times in the inscriptions of the baths complex.

Under the Principate the *singulares* (*equites* or *pedites*) were among the selected soldiers seconded to the military *officia* of prefects, proconsuls and legates from units under their command, in order to take care of the judicial and sometimes the financial affairs of their jurisdiction. After the standardization of the *officia* by Diocletian, or at least in the Byzantine period, the *singulares* – although still formally enrolled as soldiers and drawing rations as such – were in fact clerks in the subclerical branch of the civil service, that formed the lowest department of all *officia*, both in the military and in the civil administration. Although they could not aspire to the fat fees to which officials of the judicial and financial branches were entitled, these minor clerks could gain a good income from the tips given them by people who sought access to the State bureaucracy through their good offices. Cases are known of retired members of the subclerical grades who owned land and were wealthy enough to enrol a son in the *curia* of their town (Jones 1964: 563-566, 590-596).

Inscription 4 (Fig. 7)

Slab of whitish-gray marble set in the pavement next to the northwestern corner of No. 3.
Unpublished.

A three-line inscription is cut in the upper part of a flagstone 58.5 cm high, 76 cm long and 2.4 cm thick, near the northwestern corner of Area E. As far as can be judged from the broken state of the stone, the incision is precise though rather shallow. The letters belong to the round alphabet and are 3-4 cm high. The first and second line are 60 cm long.

ΕΝΤΩΑΓΙΩΤΟΠΩ	Ἐν τῷ ἁγίῳ τόπῳ
2 ΜΝΗCΘΗΠΙΟ . . ΟC	μνησθῇ Πιό[νι]ος (?)
ΚΑΙ . . ΘΥ - -	καὶ [Εὐ]θυ[μία] (?).

L. 3 is conjecturally restored, on the surmise that the dedicators may have been man and wife

In this holy place may Pionius (?) be remembered, and Euthymia (?).

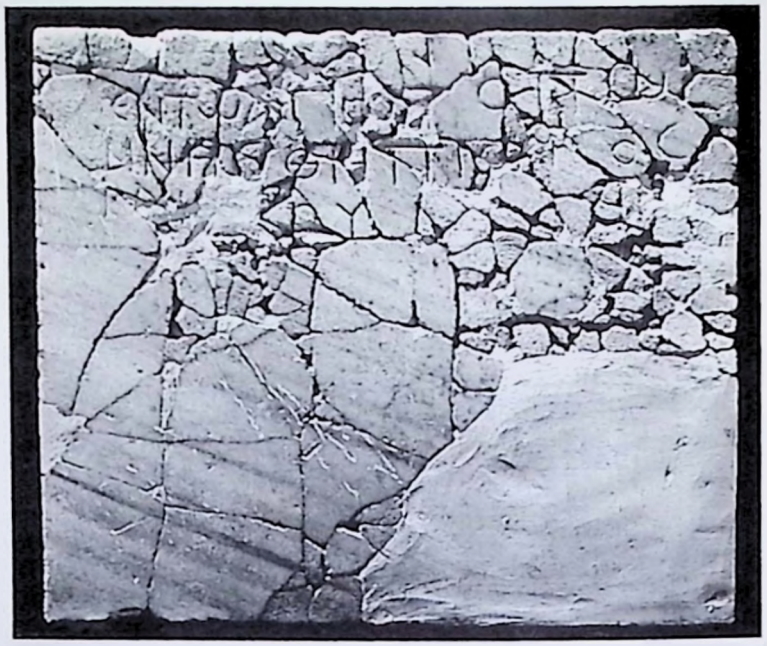




Fig. 7. Inscription 4: photograph and drawing.

The most likely restorations of the name in l. 2 are Πιόνιος (Pape and Benseler 1911: 1199) and Πιέριος (Pape and Benseler 1911: 1195; *SEG* 27, no. 1268; cf. *SEG* 30, no. 649; 31, no. 638; 35, no. 791). The variants Πιών, gen. Πιῶνος, and Πιουήρις are known from papyri: Preisigke 1922:328-329. Foraboschi (1971: 259) also cites Πίοιλος.

Inscription 5 (Fig. 8)

Slab of gray marble next to the southeastern corner of No. 2.
Unpublished.

A large flagstone, measuring 156×83.2 cm and 4.9 cm thick, was originally inscribed with two dedications, the first (A) running along its left edge and oriented to the northeast, the second (B) in the center, arranged lengthwise. The former can still be made out, although with some difficulty owing to the breaking off of a piece of marble and the wear of the stone surface. It is set on one line, 66 cm long, and the letters are ca. 2.5 cm high. The latter was completely obliterated, first by the rubbing of feet, then by the engraving of the rough outlines of two hands and two feet drawn alternately and pointing to the southeast. Votive feet were often dedicated to pagan gods, especially by pilgrims who had reached the end of their journey (Guarducci 1942-43; Cante 1984); in this case, however, the late date and the orientation of the drawing – toward Mecca – are a clear indication of its Islamic origin and significance.

ΕΝΤΩΑ . . . . . ΤΟΥΤΩΜΝΗCΘΗΑCΚ . . ΙΙΙC
Ἐν τῷ ἁ|γίῳ τόπῳ| τούτῳ μνησθῇ Ἀσκ|λη|πί(ο)ς.

In this holy place may Asclepius be remembered.

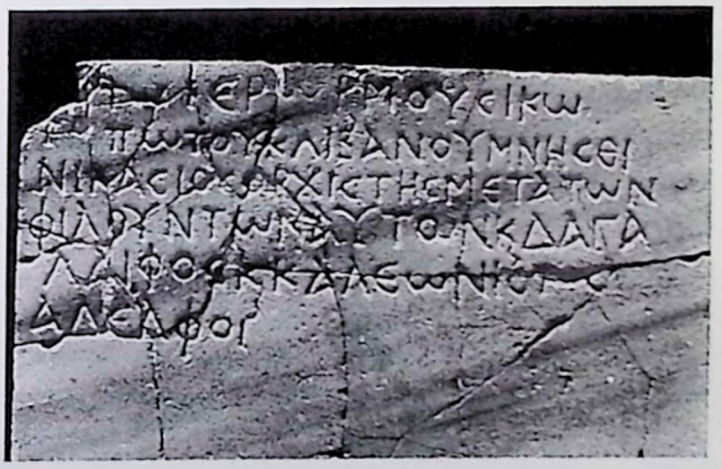
Asclepius was the god of medicine, but is also well known as a man's name (*SEG* 1990:26).



Fig. 8. Inscription 5: photograph.

Inscription 6 (Fig. 9)

Slab of whitish-gray marble near the western border of the pavement of Area E, ca. 3.5 m from the northwest corner.
Unpublished.



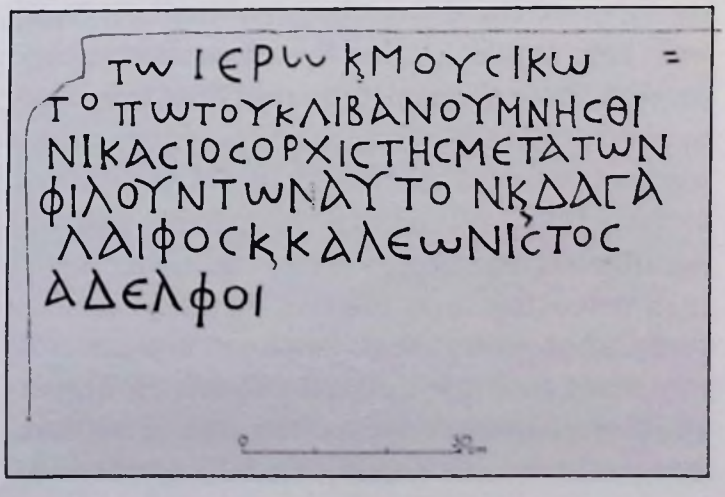


Fig. 9. Inscription 6: photograph and drawing.

The inscription is engraved lengthwise on the upper part of a flagstone measuring 69×191.6 cm and 4 cm thick. The six lines are of varying length (the third and fourth are the longest, 80 cm), the margins are unequal too, and so is the height of the characters, ranging from 2 to 4.5 cm, but the script is deeply and skillfully engraved. A small *stigma* is used for abbreviation. The upper corner of the slab is broken and the first two letters are missing.

..ΤΩΙΕΡΩΚsΜΟΥCΙΚΩ
ΤΟΠΩΤΟΥΚΛΙΒΑΝΟΥΜΝΗCΘΙ
ΝΙΚΑCΙΟCΟΡΧΙCΤΗCΜΕΤΑΤΩΝ
4 ΦΙΛΟΥΝΤΩΝΑΥΤΟΝΚsΔΑΓΑ
ΛΑΙΦΟCΚsΚΑΛΕΩΝΙCΤΟC
ΑΔΕΛΦΟΙ

[Ἐν] τῷ ἱερῷ κ(αὶ) μουσικῷ
τόπῳ τοῦ κλιβανοῦ μνησθῖ
Νικάσιος ὀρχιστὴς μετὰ τῶν
4 φιλούντων αὐτὸν κ(αὶ) Δαγα-
λαῖφος κ(αὶ) Καλεώνιστος
ἀδελφοί.

L. 2 μνησθῖ for μνησθῇ and ὀρχιστής for ὀρχηστής by iotacism

> In the sacred and refined place of the *clibanus* may Nicasius the pantomime be remembered, with those who love him, and (his) brothers Dagalaiphus and Kaleonistus.

Besides Nicasius the pantomime, or dancer, other stage artists are mentioned in the baths complex inscriptions: a piper (No. 10), an actress (No. 19), a juggler (No. 25), and perhaps also a strolling actor (No. 44). Their number is noteworthy, in view of the rare mention of the theatrical professions in inscriptions. The Roman theater of Hammat Gader was still active in the Byzantine period, and possibly these performers were at least temporary members of its staff. Two engravers and two marble workers are also mentioned in the inscriptions, artists thus accounting for about half the occupations represented at Hammat Gader. Such a high percentage may indicate that they were not visitors but professionals employed in the service of visitors, for whom inscriptions were also a means of advertising their talents. The style of Nicasius' dedication is also slightly unusual: perhaps his mention of the cultural refinement of the place[8] was meant as an allusion to his own art. The term *clibanus* seems to be used here in the general sense of bathhouse: however, it is inadvisable to take this as an accepted meaning of the word, because of the above-noted eccentricity of this text.

The name Nicasius is uncommon, as is his brother's name, Kaleonistos, 'beautiful purchase,' perhaps a hint of a servile birth. The third brother bore a Gothic name, and the family was perhaps of Gothic origin, brought into the Roman empire as slaves.[9] The theatrical professions were considered less than respectable in the Byzantine period,[10] and employment on the stage would not have been unfitting for a man of lowly origins.

Inscription 7 (Fig. 10)

Slab of whitish-gray marble, adjoining No. 6 to the east.
Unpublished.

The slab measures 69.5×72 cm and is 3.2 cm thick. In its upper portion it bears a three-line inscription; each line is ca. 65 cm long. The height of the letters varies between 6 and 7 cm. The stone surface is much worn by the rubbing of feet and the first two lines are poorly preserved. The script contains some noteworthy abbreviations that make use of different abbreviation systems: lifted letters like in the word τό(πῳ), *stigma*, both small and full-size, underlining and ligature (cf. Avi-Yonah 1940: 30-32, 34-37). Perhaps the dedicator, an advocate and thus adept at writing, wrote down the text for the stonecutter to copy with all the abbreviations he was accustomed to use on papyrus.

ΕΝΤΩΙΕΙsT̲M̲N̲CΤΡΑ
2 ΤΗΓΙCCΧΚSỊỌΥ
ΜΑΙΟΥΜΑΤΥΡΙΩΝ

Ἐν τῷ ἱερ(ῷ) τό(πῳ) μν(ησθῇ) Στρα-
2 τήγι(ο)ς σχ(ολαστι)κ(ὸς) ṭọῦ ?
Μαιουμᾶ Τυρίων.

L. 2 the last letters are very uncertain. One cannot rule out the possibility that they represented the abbreviated name of an office, and in this case one shoud read: σχ(ολαστικὸς) κ(αὶ) .. L. 3 ligature of ΩΝ

> In this sacred place may Strategius be

remembered, the advocate of Maiumas of the Tyrians.

The Maiumas was a water festival celebrated in orgiastic fashion by the Syrians in many parts of the East. It is also the name of several towns in Palestine, mostly harbors connected to a major city, like Maiumas of Gaza, a town and episcopal see in its own right, and Maiumas of Ascalon (Tsafrir, Di Segni and Green 1994: 175). Another Maiumas was located near Caesarea and a fourth near the southeastern shore of the Dead Sea (Avi-Yonah 1954: 41; 1976: 77).[11] Μαιούμας τῶν Ἀλεξανδρέων was another name of the island of Pharos, in the port of Alexandria (Sophronius, *Miracula* 4: 3432). Thus it is likely that Maiumas of the Tyrians was also a port connected with the city of Tyre, metropolis of *Phoenice Prima*. Pseudo-Scylax mentions one harbor within the ramparts of Tyre (Müller 1855: 78, fragm. 104). By the time of Strabo (*Geogr.* XVI, 2, 22-23), the city had two, one enclosed in the city wall, and the other called 'the port of the Egyptians.' Two harbors – 'the port of the Egyptians' and 'the port of Astronoe'[12] – are also mentioned in epitaphs of Tyrian fishermen and divers from the Late Roman and Byzantine necropolis (Rey-Coquais 1977: 133-134 and nos.8, 24 B, 25, 68, 77 A-B, 103, 182-182 bis), but it cannot be excluded that other harbors, anchorages and fishing coves were connected to Tyre. It is worth noting that the Maiumas festival was celebrated also in Tyre, as is documented by an inscription (Rey-Coquais 1977, no. 151).



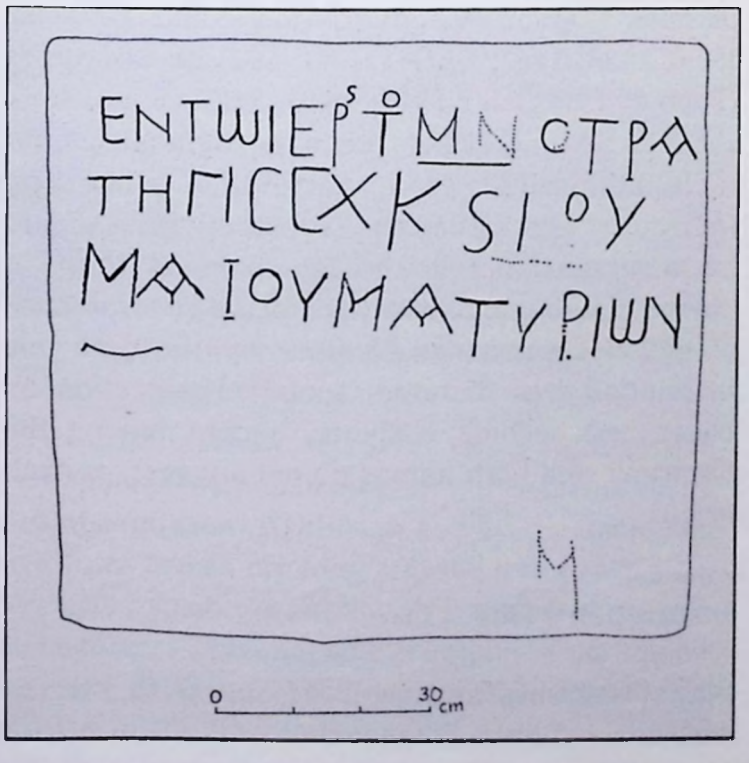


Fig. 10. Inscription 7: photograph and drawing.

Whatever it was, Maiumas of the Tyrians must have been a village or town in its own right, otherwise Strategius would not have given its name as his home. The fact that he specifies his qualification as a barrister raises the question whether Maiumas was also the place where he was enrolled to plead at the bar. In the Byzantine period the legal profession was regarded as a public service, a *militia*, and its organization was regulated by law. Applicants could choose the court where they would be enrolled, but once they had been registered, they could appear in no other court. If Maiumas had its own local court, it must have been an independent administrative unit. However, the evidence provided by this inscription is not decisive.

Inscription 8 (Fig. 11)

Slab of white marble, adjoining No. 7 on the east. Unpublished.

The inscription is carefully engraved on the whole surface of a slab 69 cm high, 40 cm wide and 3.6 cm thick; the original width was between 45 and 50 cm. The left edge of the stone, as well as the lower left corner, is missing. The length of the lines in the

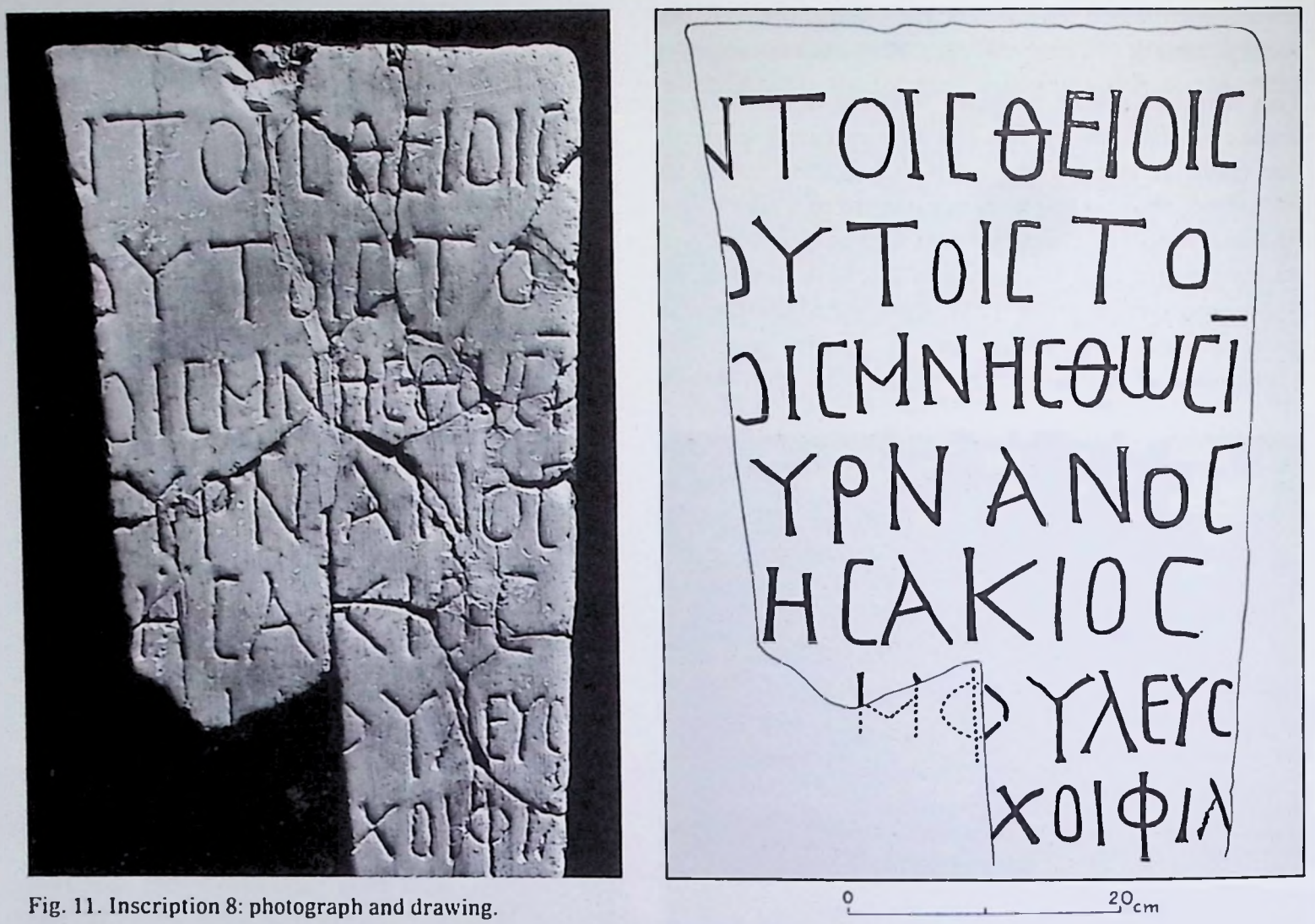


Fig. 11. Inscription 8: photograph and drawing.

surviving part reaches 38 cm and the height of the letters is between 4.5 and 6 cm. A small horizontal stroke is used as an abbreviation sign at the end of l. 3.

. NTOICΘEIOIC	[Ἐ]ν τοῖς θείοις
. OYTOICTO	[τ]ούτοις τό-
. OICMNHCΘ̄ΩC͞I	[π]οις μνήσθωσι(ν)
4 . YPNANOC	[? Κ]υρνανὸς
. HCAKIOC	[κ(αὶ)] Ἡσάκιος
. . . ΦYΛEYC	[συμ]φυλεὺς
. . . . . XOIΦIΛ	[σύμμα]χοι φίλ(οι).

L.6 the upper part of a M is visible before the Φ L. 7 Λ is incomplete. ΦIΛ as an abbreviation of φίλ(οι) is normal, but ΦI followed by a wedge is also known (Avi-Yonah 1940: 38)

> In these divine places may be remembered Kyrnanus (?) and Isaac (his) fellow-countryman, friends and comrades in arms.

The name in l. 4 may be derived from Κύρνος, Κύρνιος (Pape and Benseler 1911: 708, 746) or perhaps Cύρνος, Coύρνος (Pape and Benseler 1911: 1428, 1463; *SEG* 17, no. 592) or Φούρνιος (Pape and Benseler 1911: 1646; *SEG* 15, no. 458). Cυμφυλεύς is not registered in the dictionaries, but it is admissible as a variant of σύμφυλος (adjective) or συμφυλέτης (substantive): it should be understood not in the etymological sense of 'member of the same tribe,' but in the general sense of 'fellow-countryman,'[13] since by the time this inscription was dictated, social organization by tribes had become obsolete, except among the Saracens, and both names do not suggest an Arab origin.

Inscription 9 (Fig. 12)

Slab of whitish-gray marble, adjoining No. 8 on the east.
Unpublished.

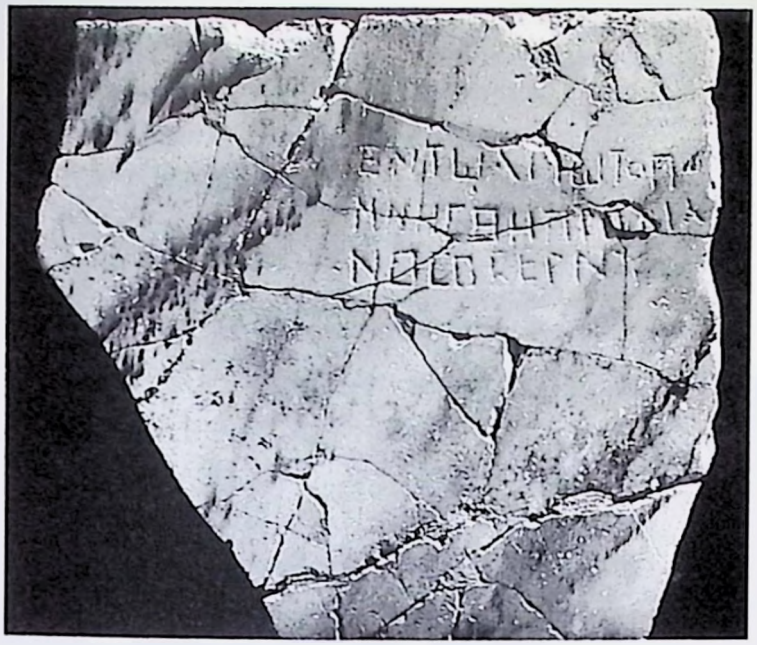




Fig. 12. Inscription 9: photograph and drawing.

The inscription is incised in the upper right portion of a flagstone with broken edges, measuring (in its present condition) 93×93 cm and 4.5 cm thick. The three lines are 45 cm long and the letters are 4 cm high. The incision is shallow, but the script is even and accurate. The characters belong to the square alphabet. This and the appearance of a tiny *omicron* in the first line suggest a relatively early date: this inscription may have been written at about the same time as No. 2, especially since it was engraved on a flagstone set on the axis of the hall, only a couple of steps from the dedicatory inscription.

ΕΝΤΩΑΓΙΩΤΟΠΩ	Ἐν τῷ ἁγίῳ τόπῳ
2 ΜΝΗCΘΗΠΡΙCΚΙΑ	μνησθῇ Πρισκια-
ΝΟCΟΒΕΡΝΥ	νὸς ὁ Βερν‹ο›υ.

In this holy place may Priscianus (son) of Verinus be remembered.

Βερνος is either a variant of the Semitic name Βαρνας, Βαρναιος (Wuthnow 1930: 34), or the equivalent of Verinus in contracted form, as Βερνίκη, Βερνικιανός coexist with Βερενίκη, Βερενικιανός.

Inscription 10 (Fig. 13)

Slab of gray marble on the western edge of the pavement, adjoining No. 6 on the south.
Unpublished.

The inscription is engraved breadthwise on a flagstone 176 cm high, 76 cm wide and 3.3 cm thick.



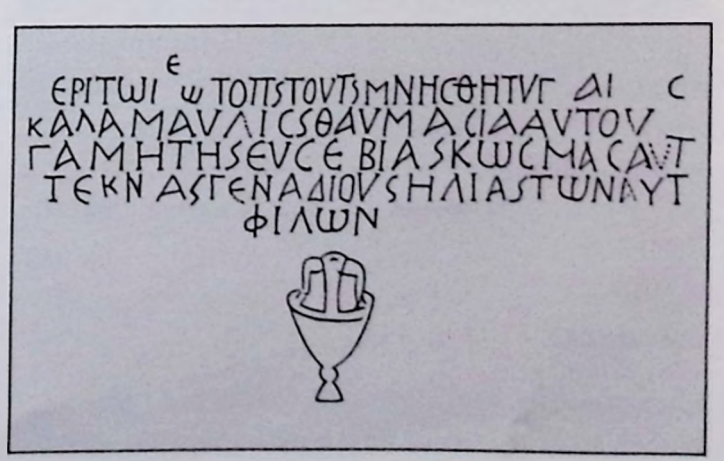


Fig. 13. Inscription 10: photograph and drawing.

The carving is deep and careful. The letters are 3 cm high. The longest line measures 72 cm; the fifth line is short and roughly centered. Underneath is engraved an amphora: like the script, it faces east, toward the center of the hall. A gameboard is incised near the upper right corner of the stone, above the inscription.

The text contains several abbreviations, mainly making use of the *stigma*. A lifted letter is visible in the first line, probably a correction made by the stonecutter rather than an abbreviation.

ENTWI^{E} . ωTOΠSTOVTSMNHCΘHTVΓ. AN . C
ΚΑΛΑΜΑVΛICSΘAVMACIAAVTOV
ΓAMHTHSEVCEBIASKωCMACAVT
4 TEKNASΓENAΔIOVSHΛIASTωNAVT^{S}
ΦIΛωN

Ἐν τῷ ἱε[ρ]ῷ τόπ(ῳ) τούτ(ῳ) μνησθῇ Τυγ[ρ]άν[η]ς
καλαμαύλις (καὶ) Θαυμασία αὐτοῦ
γαμήτη (καὶ) Εὐσεβία (καὶ) Κώσμας αὐτ(ῶν)
4 τέκνα (καὶ) Γεναδίου (και) Ἠλία (καὶ) τῶν αυτ(ῶν)
φίλων.

L. 2 καλαμαύλις = καλαμαύλης, iotacism

In this sacred place may Tigranes the piper be remembered, and Thaumasia his wife, and Eusebia and Cosmas their children, and (may remembrance be) of Gennadius and Elias and of their friends.

Tigranes, the reed-pipe player, has an Armenian name, which is commonly written Τιγράνης with a *iota*. This name probably reflects the man's ethnic origin: Tigranes was the dynastic name of the native kings of Armenia, the last of whom was killed by the Persians in ca. 350.[14] Armenian men and women not only visited the Holy Land as pilgrims, but sometimes also settled there (Hintlian 1976).[15] Thus Tigranes the piper may have been an Armenian and perhaps also a resident, one of the artists working in Hammat Gader.

For the transition from passive to impersonal form with genitive compare No. 3.

Inscription 11 (Fig. 14)

Slab of whitish-gray marble, next but one to the east of No. 10, in the same row.
Unpublished.

The inscription is engraved lengthwise on a flagstone measuring 75.5×115 cm and 4.1 cm thick. The left edge of the slab is broken and the original length may have been four Byzantine feet (ca. 123 cm). The stone surface is rather worn by the rubbing of feet, but the beautifully carved script is still readily legible. The letters are 3-4 cm high. The longest line is 86 cm; the left margin is flush, while the right margin is uneven, as the stonecutter avoided breaking up words. In l. 3 two letters that had been omitted were added above the line. A cross is deeply engraved under the script; however,

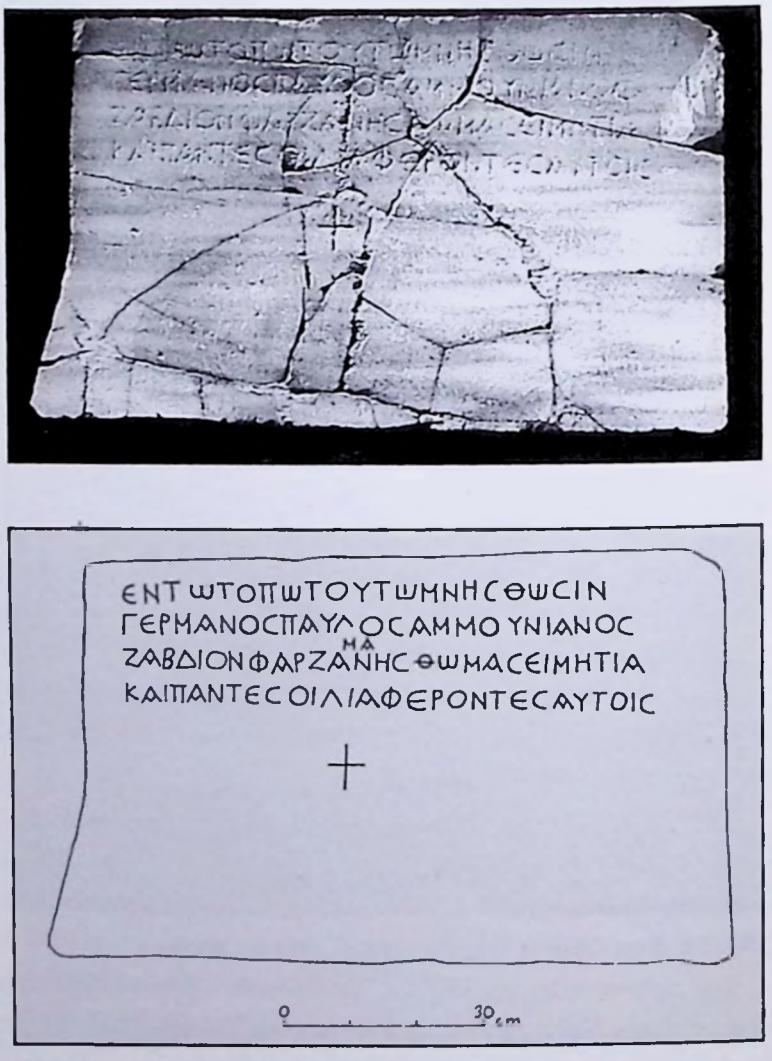


Fig. 14. Inscription 11: photograph and drawing.

it is not absolutely certain that it was part of the inscription, since it apparently occupied the center of the stone, but is not aligned with the axis of the script. It seems that the inscription was carved when the flagstone was *in situ* and probably already chipped on the left side.

ΕΝΤΩΤΟΠΩΤΟΥΤΩΜΝΗCΘΩCΙΝ
ΓΕΡΜΑΝΟCΠΑΥΛΟCΑΜΜΟΥΝΙΑΝΟC
ΖΑΒΔΙΟΝΦΑΡΖΑΝΗCΘΩΜΑCΕΙΜΗΤΙΑ
4 ΚΑΙΠΑΝΤΕCΟΙΔΙΑΦΕΡΟΝΤΕCΑΥΤΟΙC
+

Ἐν τῷ τόπῳ τούτῳ μνήσθωσιν
Γερμανός, Παῦλος, Ἀμμουνιανός,
Ζαβδί«ω»ν, Φαρζαμάνης, Εἰμητία,
4 καὶ πάντες οἱ διαφέροντες αὐτοῖς.

In this place may be remembered Germanus, Paulus, Ammonianus, Zabdion, Farzamanes, Imetia and all their kinsfolk.

Ἀμμουνιανός is a variant of Ἀμμώνιος, Ἀμμωνιανός, a theophoric name of Egyptian origin, most common in Egypt but well known also in Palestine and Arabia, where it was perhaps assimilated with a local name derived from the Arabic root ʿMN.[16] Ζαβδίων, variant of Ζάβδος, is a Semitic name, as is also Θώμας (Wuthnow 1930: 48, 55). Γερμανός, Greek transcription of the *cognomen* Germanus, is no less of a Roman name, on the face of it, than Paulus; however, in view of the frequency of the name Γερμανός in areas with an indigenous Arab population, it has been suggested (Negev 1981: 29; Sartre 1985: 193) that it might stand not for the Latin Germanus, but for the Semitic name GRMW, normally transcribed Γάρμος, Γαραμος (Wuthnow 1930: 39; Cantineau 1932: 78-79; Harding 1971: 170; Stark 1971: 14, 82-83; Negev 1991: 19-20, nos. 244-256; 130, no. 2007). This may very well be the case here. On the other hand, Φαρζαμάνης should be compared with the Parthian and Armenian name transcribed in Greek Φαρασμάνης, Φαρισμάνης (Pape and Benseler 1911: 1601). The feminine name Εἰμητία, to my knowledge, appears here for the first time in Greek transcription. It is neither a Greek nor a Latin name, and should probably be compared with the German name that appears in medieval sources as Imeza Imezha, Imiza, Himiza (Piper 1884: 462, 466).

The dedicators invoked a blessing upon their respective families. The phrasing makes it obvious that they were not related to one another; even the woman, Imetia, does not appear to be the wife or sister of any of the men. This is also confirmed by the different ethnic background of the names. What link, then, made them join forces in the dedication of this inscription? Were they fellow-visitors, perhaps fellow-sufferers from some malady, or fellow-travellers thrown together by mere chance? It seems unlikely that a woman who was not a patrician lady would have travelled alone. On the other hand, it is not inconceivable that what these people had in common was an occupation, and one that could be practised also by a woman: in other words, they may have been a travelling company of performing artists, like the actors and musicians mentioned in Nos. 6, 10, 19, 25, 44.

Inscription 12 (Fig. 15)

Fragment of white marble, part of a broken flagstone in the same row as Nos. 10-11, on the eastern side of Area E.
Unpublished.

The inscription is deeply albeit roughly carved along the eastern edge of the flagstone, originally

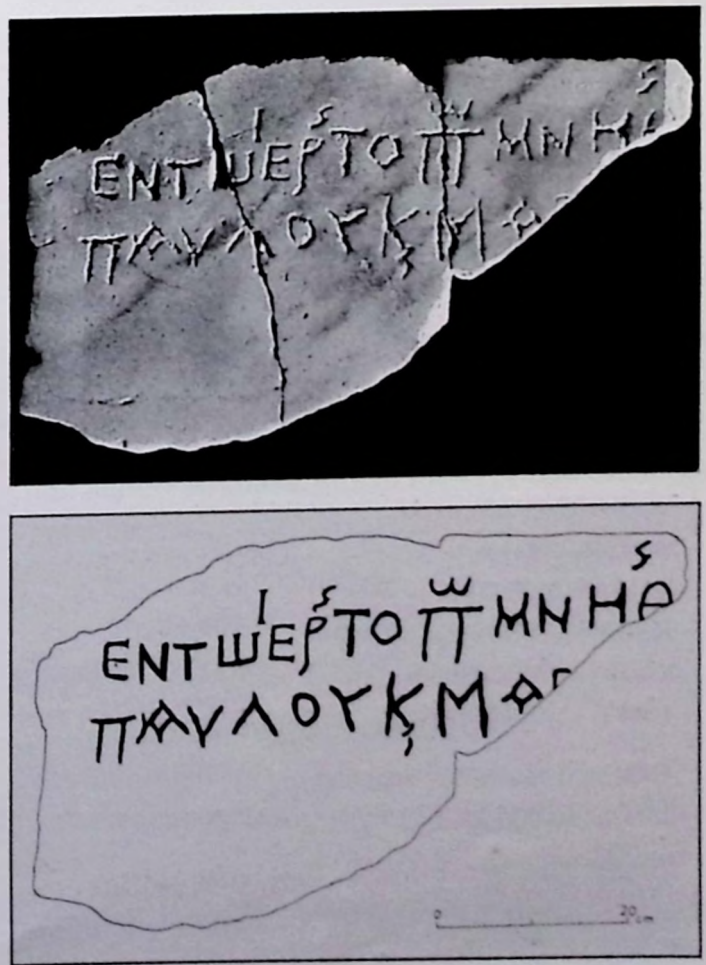


Fig. 15. Inscription 12: photograph and drawing.

the short side, presently measuring 69 cm. The maximum height of the fragment is 40 cm and its thickness is 3.2 cm. The script faces east and the characters are 3-3.5 cm high. Several abbreviations are used, including lifted letters.

ΕΝΤΩΙΕΡΤΟΠΜΝΗΘ
2 ΠΑΥΛΟΥΚ‹ΜΑΡ - - -

Ἐν τῷ ἱερ(ῷ) τόπῳ μνη(σ)θ[ῃ ?]
2 Παύλου κ(αὶ) Μαρ[ίας ?].

In this sacred place may Paul and Mary (?) be remembered.

If, as it seems, the right upper corner of the stone is preserved and no letter is missing in l. 1, the restoration proposed above is the most likely. The passive verb is construed as an impersonal form with the genitive (cf. above, Nos. 3, 10).

Inscription 13 (Fig. 16)

Slab of white marble by the eastern wall of Area E, in the same row as Nos. 10-12.
Unpublished.

The inscription is deeply and carefully carved on a slab 34 cm high, 3.2 cm thick, and 65 cm long in its present state: the right side is broken and the end of most lines is missing. The left margin of the inscription is flush; the letters are 2-3 cm high. The script faces east. The only visible abbreviation is a horizontal stroke on the *nomen sacrum*. A cross is engraved to the left of l.6, and possibly a corresponding one was set at the opposite end, after ΑΜΗΝ.

ΟΘ̄ϹΟΤΩΝΟΛΩ - - -
ΒΟΗΘΗϹΟΝΑΜΕΛ - -
ΚΑΙΑΛΥΠΙΩΚΑΙΡΗΓ[- -
4 ΤΕΚΝΟΙϹΑΥΤΟΥΤΟΙϹΚΟΜΗ -
ΚΑΙΗΜΙΝΠΑϹΙΤΟΙϹΦΙΛΟΥ- -
+ ΑΥΤ. . . ΑΜΗΝ [+]

Ὁ Θεὸς ὁ τῶν ὅλω[ν δημιουργὸς ?]
βοήθησον Ἀμελ[ιανῷ ?]
καὶ Ἀλυπίῳ καὶ Ῥηγί[νῳ ?]
4 τέκνοις αὐτοῦ τοῖς κόμη[σι]
καὶ ἡμῖν πᾶσι τοῖς φιλοῦ[σι]
αὐτ[ούς]. Ἀμήν.

L. 1 for the formula with δημιουργός see No. 33; δυνάστης, δεσπότης. κύριος or κτίστης are also possible readings: cf. III Macc.2:3; 6:39 L. 2 Ἀμελιανῷ fills the gap better than Ἀμελίῳ L. 3 Ῥηγίλλῳ is also a possibility, as well as Ῥηγίνῃ and Ῥηγίλλῃ L. 5 the left arm of the Υ is quite visible, so the reading φίλοι[ς] αὐτ[ῶν] must be excluded L. 6 the gap cannot contain less than three letters

God the [Creator] of all things, help Ameli[anus], and Alypius and Reginus (?) his children, the counts, and us all who love them. Amen.



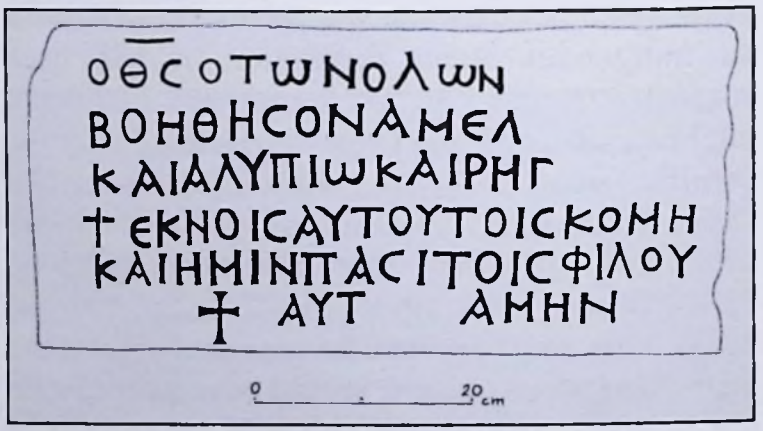
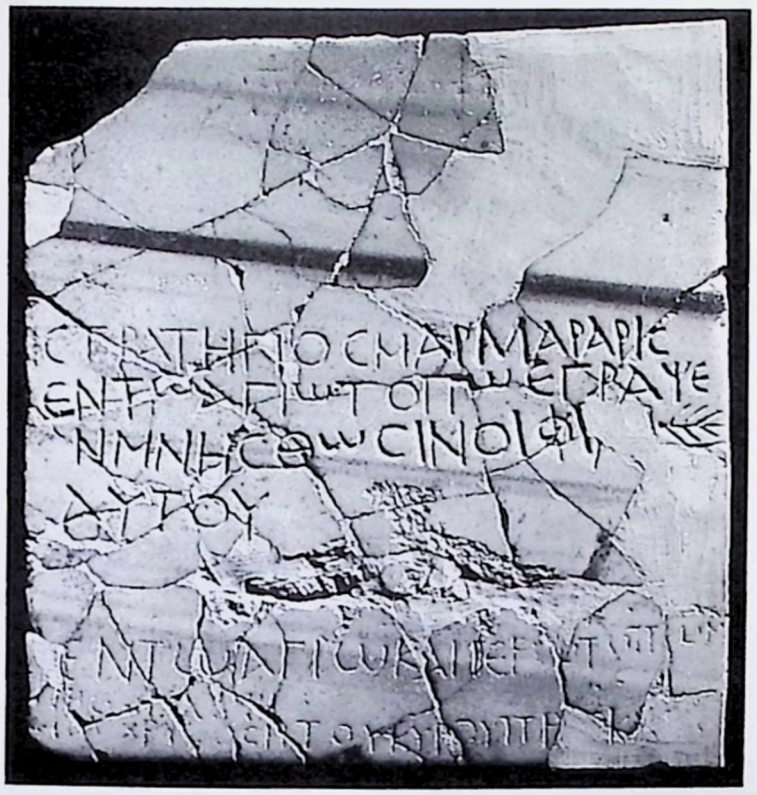


Fig. 16. Inscription 13: photograph and drawing.

Τέκνα may refer to both sexes, and the second name in l. 3 might be a daughter's, but the most reasonable interpretation of ΚΟΜΗ- - as the dative plural of κόμης, makes this possibility remote. The *comitiva* was awarded personally and for life, but was not hereditary, so a woman could be called *comitissa* only by courtesy, as wife of a *comes*. Reginus, a rare name in Palestine, appears in a Byzantine mosaic inscription from Beth Hanan (Avi-Yonah 1933: 50, no. 336).

Inscription 14 (Fig. 17)

Slab of white veined marble, adjoining No. 12 on the south.
Unpublished.



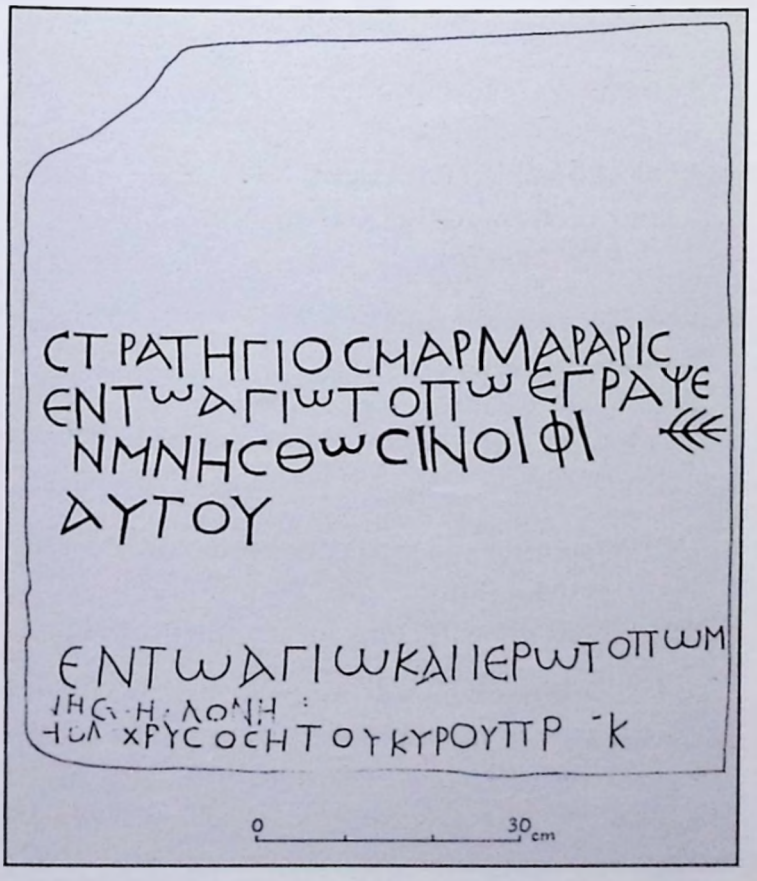


Fig. 17. Inscriptions 14-15: photograph and drawing.

Two inscriptions in different hands are carved breadthwise on a slab 97 cm high, 87.8 cm long and 3.7 cm thick. No. 14 was the first to be engraved, deeply and carefully, in the middle section of the stone. The letters are 3-4 cm high, with small *omega*, only 2.5 cm high. The third line ends with a palm leaf. There may have been a cross below the script.

CTPATHГIOCMAPMAPAPIC
ENTωAГIωTOПωEГPAΨE
NMNHCθωCINOIΦIΛ (palm leaf)
4 AYTOY

Στρατήγιος μαρμαράρι(ο)ς
ἐν τῷ ἁγίῳ τόπῳ ἔ|γραψε-
ν. Μνήσθωσιν οἱ φίλ(οι)
4 αὐτοῦ.

> Strategius the marble worker wrote (this) in this holy place. May his friends be remembered.

Strategius may have been one of the stoneworkers who laid the pavement in the hall. The inscription is set in a prominent spot, in front of an alcove through which a passage led to the Hall of the Fountains.

Inscription 15 (Fig. 17)

Inscription engraved on the same slab as No. 14.
Unpublished.

A second inscription is carved along the lower border of the slab. The incision is superficial, but the script is carefully shaped. The letters are 3.5-4 cm high. The characters in the first line are larger than the rest.

ENTωAГIωKAIIEPωTOПωM
2 NHCθHAΔONH
HOΛOXPYCOCHTOYKYPOYΠΡ.CK- -

Ἐν τῷ ἁγίῳ καὶ ἱερῷ τόπῳ μ-
2 νησθῇ Ἀδόνη
ἡ ὁλοχρυσὸς ἡ τοῦ κύρου Πρ[ί]σκ[ου].

> In this holy and sacred place may Adone be remembered, the all-golden of the lord Priscus.

Ἀδόνη can be a feminine form of the mythological

name Adonis; however, it may also be coined from ἀδονίς, poetic variant of ἀηδονίς, 'nightingale,' also in the sense of 'poet.' Ὁλοχρυσός, 'made of solid gold,' should also be understood figuratively: the woman with the romantic name was perhaps a golden-haired beauty. Was she the wife, the mistress, or a beloved daughter of Priscus? The last possibility seems too prosaic. The inscription may represent an elaborate compliment dictated by a suitor for the woman he loved. We are reminded of the ardent wooing of the youth, whose story is told by a shocked Epiphanius (*Haer.* 30, 7-8: 342-343).

Inscription 16

Slab of white-gray marble, adjoining Nos. 14-15 on the south.
Unpublished.

The slab, measuring 61×87 cm and 3.2 cm thick, bears no Greek inscription but two incised gameboards, one 22.5×20.8 cm, the other 18.5×15.2 cm, and an Arabic inscription. See below, Chapter 4, No. 3.

Inscription 17 (Fig. 18)

Slab of white marble veined with gray, on the western border of the pavement of Area E.
Unpublished.

The inscription is carefully engraved on the lower half of a flagstone measuring 93.3×144 cm and 4 cm thick. The lines are 105 cm long and the letters are 5-7 cm high. The script faces south. It contains several abbreviations, as well as lifted letters: the group Τῳ in the first line, possibly an afterthought of the stonecutter in order to correct the haplography, and a small O in l.4, the correction of a vernacular spelling; by the fifth century the names ending in -ιος were pronounced without the O. The last line is short and decorated with a palm leaf at the beginning and at the end. The flagstone adjoining No. 17 on the southeast is also decorated with a palm leaf.

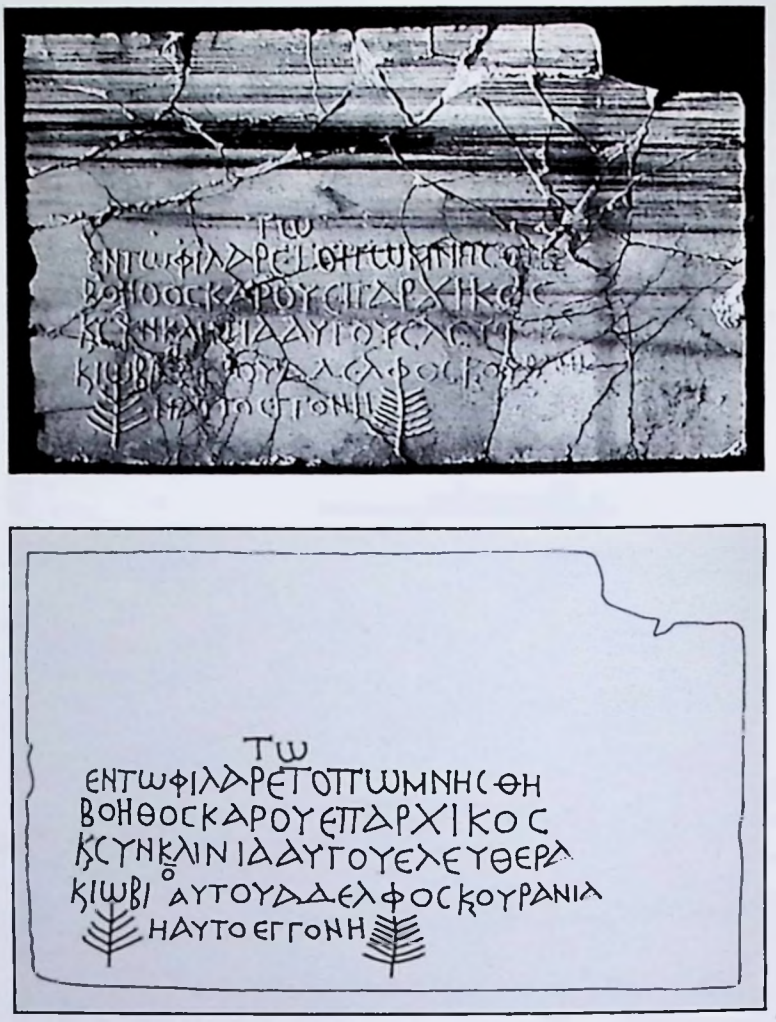


Fig. 18. Inscription 17: photograph and drawing.

ΕΝΤΩΦΙΛΑΡΕΤΟΠΩΜΝΗCΘΗ
ΒΟΗΘΟCΚΑΡΟΥΕΠΑΡΧΙΚΟC
ΚCΥΝΚΛΙΝΙΑΑΥΤΟΥΕΛΕΥΘΕΡΑ
ΚΙΩΒΙC ΑΥΤΟΥΑΔΕΛΦΟCΚ ΟΥΡΑΝΙΑ
ΗΑΥΤΟΕΓΓΟΝΗ

Ἐν τῷ φιλαρέτῳ τόπῳ μνησθῇ
Βοηθὸς Κάρου ἐπαρχικὸς
κ(αὶ) συνκλινία αὐτοῦ Ἐλευθέρα
κ(αὶ) Ἰώβιος αὐτοῦ ἀδελφὸς κ(αὶ) Οὐρανία
ἡ αὐτο(ῦ) ἐγγόνη.

> In this sublime place may Boethos son of Carus, the *praefectianus*, be remembered, and Eleuthera his wife, and Iobius his brother, and Urania his granddaughter.

Boethos was a member of the prefect's staff (ἐπαρχικός, *praefectianus*). The term is a general one, covering different functions in any of the many *scrinia* and *scholae* that formed the prefect's *officium*, as well as different ranks in the service

hierarchy. Since promotion in the service was exclusively attained by seniority, one can suppose that Boethos, being already a grandfather, had secured a fairly high position. *Praefectiani* were recruited from the middle classes, *curiales* and *cohortales* (provincial officers), and earned good incomes, not so much from their salary as from the fees (*sportulae*) they exacted from the public for their services. On retirement, if they had been sufficiently longlived to have stayed the full course and reached the summit of the hierarchical ladder, they received a *comitiva* and the title of *spectabilis*, at least from the end of the fifth century (Jones 1964: 586-592, 602-606). Boethos, however, in spite of his advanced age, was still in business. It is remarkable how much his work, which largely involved clerical functions, seems to have influenced the man's language. His choice of words is pompous, especially the term συνκλινία, 'bed-companion,' instead of the common σύμβιος, 'wife,' and probably he himself demanded the pedantic correction of spelling in l. 4.



Fig. 19. Inscriptions 18-19: photograph and drawing.

Inscription 18 (Fig. 19)

Slab of gray marble, to the east of No. 17. Unpublished.

Two inscriptions are engraved on a flagstone 69 cm high, 57 cm wide, in its present state, and 3.5 cm thick. The slab is broken on the left side, so that the beginning of the lines is missing. The first and longer inscription was incised on the upper part of the stone, in lines of unequal length. The letters are 3-3.5 cm high. A palm leaf engraved underneath probably marked the axis of the slab.

. . . . . ΙΩΤΟΠΩ
. . ΗCΘωCINCTPATHΓIC
. . . . . ΛΑΝΟCΚΑΙΠΑΥΛΟC
4 . . . . ΥΠΑΤΡΙΟCΚΑΙΕΥCΕΒΙC
- - - OCTATHCΚΑΙΜΕΛΑΝΟC
- - - ΛΟΙΦΙΛΟΙ

[Ἐν τῷ ἁγ]ίῳ τόπῳ
[μν]ήσθωσιν Στρατηγι(ο)ς
[καὶ Σι]λανὸς καὶ Παῦλος
4 [καὶ Ε]ὐπάτριος καὶ Εὐσέβι(ο)ς
[ὁ ? ζυγ]οστάτης καὶ Μελανὸς
[καὶ οἱ ἄλ]λοι φίλοι.

L. 5 [ὁ πρ]οστάτης ?

> In this holy place may Strategius be remembered, and [Si]lanus and Paul and [E]upatrius and Eusebius the public weigher, and Melanus and [the other] friends.

The name Εὐπάτριος, though less common than the form Εὐπάτωρ, is known (Pape and Benseler 1911: 417; for Εὐπάτωρ in papyri see Preisigke 1922: 113; Foraboschi 1971: 115). The fragmentary word in l.5 can scarcely be a Christian name: its desinence shows that it is a noun pertaining to a profession. It might be προστάτης, 'chief,' or 'administrator,' but for the fact that it is not a proper professional title and, lacking specification, it misses the point of identifying the bearer. Therefore the alternative ζυγοστάτης seems preferable. The public weighers were concerned with the collection of taxes in kind. A law issued in 412 (*CJ* 11, 28, 1) mentions the *munus zygostasii* together with the *crithologia*, in connection with the estimate of the quantities of grain brought to

Alexandria. These officials were supposed to protect the taxpayers from being cheated by greedy *curiales*. A new task was assigned to the public weighers in 363 by Julian, who issued an edict (*CTh* 12, 7, 2 = *CJ* 10, 73, 2) ordering the appointment in every town of a ζυγοστάτης charged with settling disputes about the weight of the gold currency, the *solidus*. The *solidus* was never adulterated or reduced in weight from Constantine's time until the Middle Ages, and it was regarded as a piece of solid gold of fixed weight (4.55 g or four scruples), rather than a coin. The exchange of copper for gold and *vice versa* was spoken of as selling and buying *solidi*. People were troubled by the apparent size of the coin and preferred larger thin specimens to *solidi* of small module, and laws were repeatedly issued ordering the public to accept all full-weight *solidi* as of equal value, whatever their size. However, the coins might be worn or fraudulently clipped: therefore in all transactions – or at least whenever suspicion arose – the *solidi* were weighed and rated at minus so many carats, if found wanting.[17] The official controller in charge in every town had full authority to settle any dispute. His fee was payed by the customers. Another ζυγοστάτης is mentioned in No. 21.

Inscription 19 (Fig. 19)

Inscription engraved on the same slab as No. 18.
Unpublished.

A second inscription was engraved under No. 18, set in two lines on either side of the palm leaf. The letters are much larger, 5 to 9 cm, and the lines shorter, ca. 40 cm in the present broken state of the slab, but apparently there are no letters missing. The text shows no relation to No. 18.

ΕΥΦΗΜΙΑ	Εὐφημία
2 Η ΘΥΜΕΛΙΚΗ	ἡ θυμελική.

Euphemia the actress.

It is possible that an abbreviated ΜΝ(ησθῇ) or Κ(αί), referring to the verb in the preceding text, may have been lost at the beginning of the first line, but this is not necessarily the case. The sense in any case is clear: 'may Euphemia the actress be remembered,' as in all the other inscriptions. Like other artists mentioned in the inscriptions, Euphemia may have be on the staff of the local theater.

Originally the term θυμελιακοί referred to the musicians and dancers who performed in the orchestra, as opposed to the actors, σκηνικοί. In the Byzantine period, however, θυμελιακός had come to indicate the actors, whereas σκηνικός applied to stage performers in general. The profession of actor, θυμελικός, is mentioned in *CJ* 1, 4, 14, a law issued by Leo (457-74), forbidding the inducement to prostitution of any person, free or slave, 'even an actor or a stage performer' (θυμελιακὸς ἢ σκηνικός); by the same law, women could not be forced to work in the theater, that was considered but a step from harlotry.[18]

Inscription 20 (Fig. 20)

Carved slab of white marble, along the eastern wall of Area E.
Unpublished.

The marble plaque, 85 cm high and 50 cm wide in its present state, is carved with a geometric pattern of which only the central part survives. The slab, 5.3 cm thick and smooth on the back, was probably cut and reused in the paving. The length of the lines is adapted to the present width, showing that the inscription was engraved after the stone had been hewn. A cross was incised underneath the script almost exactly in the center of the carved cornice; later it was obliterated, perhaps during the Muslim period. The upper right corner of the slab is missing and the end of all the four lines is missing; most of the text, however, can be restored.

ΕΝΤΩΑΓ..	Ἐν τῷ ἁγ[ίῳ]
ΤΟΠΩΜΝΗ - - -	τόπῳ μνή[σθωσιν]
ΕΥΘΥΜΙΑΚ - - -	Εὐθυμία κ(αὶ) [- -]
4 ΕΠΙΦΑΝΙCΕΓΡΑΨ.	Ἐπιφάνι(ο)ς ἔγραψ[ε.]
+	

L. 2 μνη[σθῇ] is also possible

In this holy place may Euthymia and .. be remembered. Epiphanius wrote (this).

Epiphanius was probably the dedicator rather than the stonecutter who carried out the commission.





Fig. 20. Inscription 20: photograph and drawing.

Inscription 21 (Fig. 21)

Slab of white-gray marble, on the western border of the pavement of Area E, ca. 8.40 m from the northwestern corner.
Unpublished.

The inscription is engraved breadthwise on a flagstone measuring 137×98.2 cm, and 3.7 cm thick. The lines are 65 cm long and the average height of the characters is 3 cm. The script faces west, i.e., in the direction of the passageway leading to the adjoining wing, Area C (see Fig. 1). The letters are elegantly shaped, with a hint of serifs reminiscent of monumental writing. A tiny *stigma* joined to the lower tip of K is used as an abbreviation of καί. A cross is incised under the last line, exactly on the vertical axis of the stone.

ΕΝΤΩΧΑΡΙΕCΤΑΤΩΤΟΠΩ
ΤΟΥΤΩΜΝΗCΘΗΜΑΞΙΜΙΝΟCΟ
ΖΥΓΟCΤΑΤΗCKsCΑΡΙΑCKsΓΡΗΓΟΡΙΟ.
4 KsΕΥCΕΒΙΑΤΕΚΝΑΑΥΤΟΥ
+

Ἐν τῷ χαριεστάτῳ τόπῳ
τούτῳ μνησθῇ Μαξιμῖνος ὁ
ζυγοστάτης κ(αὶ) Σαρίας κ(αὶ) Γρηγόριο[ς]
4 κ(αὶ) Εὐσεβία τέκνα αὐτοῦ.

In this graceful place may Maximinus the public weigher be remembered, and Sarias and Gregorius and Eusebia his children.

On the office of ζυγοστάτης, see above, commentary to No. 18. The name Maximinus is rare in Palestine and its vicinity, except as an imperial name appearing on milestones, boundary stones

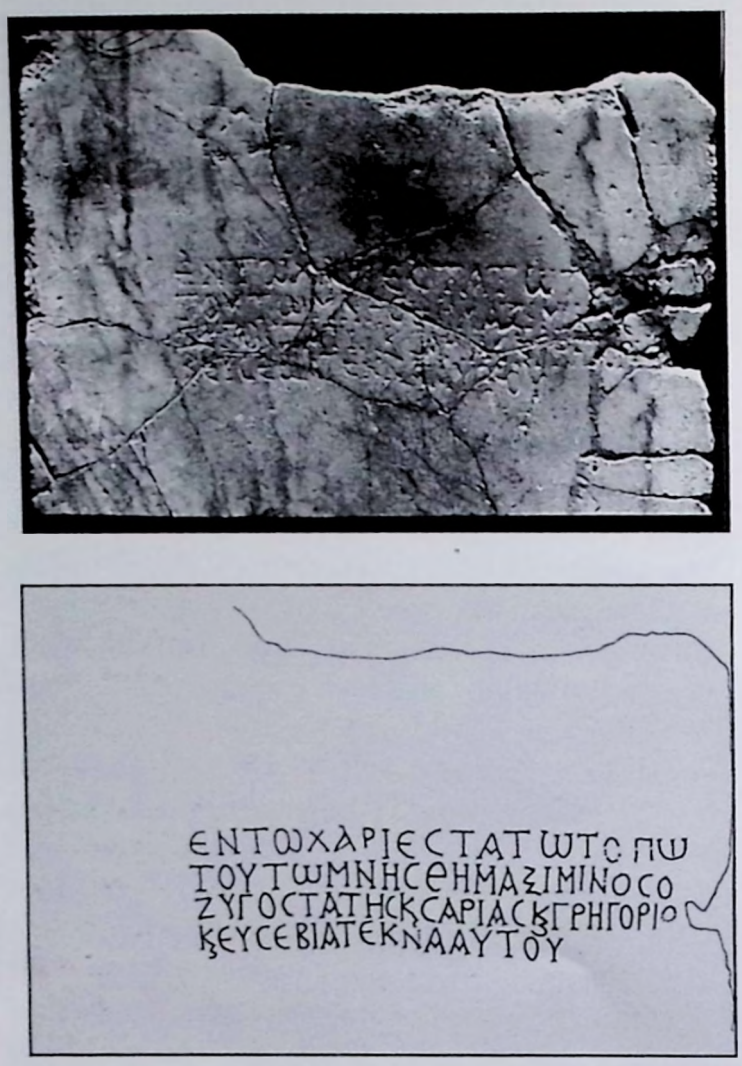


Fig. 21. Inscription 21: photograph and drawing.

and other official inscriptions, or as the name of magistrates who probably were not natives of the region. To my knowledge, Maximinus-Maximina as a local name appears only in Hauran (Waddington and Le Bas 1870, nos. 2393-2396; Savignac and Abel 1905: 605, no.22). Maximus, Maxima are also extremely common in the Hauran;[19] in Palestinian inscriptions, this name is mostly borne by Jews and Samaritans.[20] Σαρίας is a Greek transcription of the Hebrew name Seraiah (II Sam. 8: 17; Jer. 36: 26), Σαρέας in Josephus (*Ant.* 10, 8, 5 [149]; 9, 2 [160]). Since he is mentioned first, Sarias was probably the first-born and bore his grandfather's name: the other children have common Greek-Christian names. It is not unlikely that the family might have been of Jewish or Samaritan ancestry and had recently converted to Christianity, perhaps as a measure to ensure Maximinus' standing as a public official. See commentary to No. 2.

Inscription 22 (Fig. 22)

Slab of gray marble, adjoining No. 21 on the east. Unpublished.

The text is engraved lengthwise, on the upper part of a flagstone 90.7 cm high, 178.7 cm long and 3.2 cm thick. The letters, beautifully engraved in oval shape, are 6-10 cm high. The first line is 95 cm long, the second is slightly shorter, and the last one is quite short. In the second line a dot and another unusual abbreviation are used. The text began and ended with crosses, later obliterated.

+ΕΝΤΩΑΓΙΩΤΟΠΩΜΝΗΣΘΗ
2 ΛΕΟΝΤΙCΝΟΤ.ΔΡΟCΕΡΙΟΥΤΡ!!!
ΔΑΜΑCΚΗΝΟΥ+

Ἐν τῷ ἁγίῳ τόπῳ μνησθῇ
2 Λεόντι(ο)ς νοτ(άριος) Δροσερίου τριβ(ούνου) ?)
Δαμασκηνοῦ.

L. 2 alternative reading ΤΡ!Μ = τρι(σ)μ(ακαρίου). For the abbreviated νοτ(άριος) and τριβ(οῦνος), see Avi-Yonah 1940: 88, 106

> In this holy place may Leontius the notary be remembered, (the son) of Droserius, *tribunus* of Damascus.

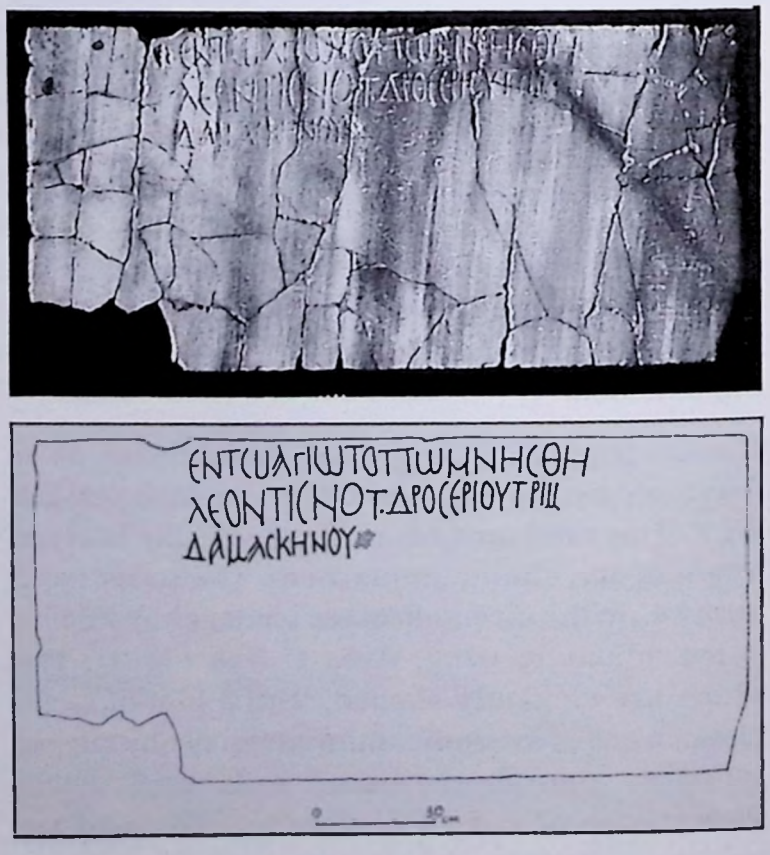


Fig. 22. Inscription 22: photograph and drawing.

The last letters of l. 2 are poorly preserved and present us with a slight difficulty in reading and interpretation. Τρισμ(ακάριος, 'the thrice-blessed,' is said of a saintly deceased, especially of a churchman. However, Δαμασκηνοῦ is clearly connected with Δροσερίου, and there seems to be no point in referring the ethnic attribute to a dead man. On the other hand, if Droserius was alive and in office, probably away from his mother-city, the indication of his origin would have be significant for both father and son, especially if the latter had been born away from the family's cradle.

Tribunus was a military rank, denoting the commander of a regiment or, more loosely, any commanding officer (*Jones* 1964: 640), but, as the civil service was also organized as a *militia*, civil servants too – and specifically members of the corps of notaries – could rise to the tribunate (Jones 1964: 573-574). Customarily service in the *militia* was passed on from father to son, and since Leontius was a notary, his father was probably a senior member of the same service.

A *notarius* originally was a shorthand writer who functioned as a secretary and recorder of proceedings. As already noted in the commentary to No. 7, the dedicator's profession seems to have affected his style of writing: apparently Leontius gave the stonecutter a text to copy with such abbreviations as he himself was accustomed to use in his notes.

There were several kinds of notaries in the Byzantine empire. The private notaries, *tabelliones* (ταβελλιῶνες, νομικοί), were very humble people, public scribes who specialized in drafting wills and other legal acts, and were payed by the line. Even if they might acquire wealth and sometimes aspire to the curia, the law kept them firmly in their status of commoners (Jones 1964: 515-516, 1218, notes 105-106; cf. *CTh* 9, 19, 1; 12, 1, 3; *Nov.* 44, cf. *Nov.* 73, 7). Ecclesiastical notaries recruited from the clergy kept the records of the episcopal churches and enjoyed the privileges of their clerical grades, from lector for the junior ones to priest as they rose in seniority. Leontius, however, did not belong to either group, but to the far more important class of imperial notaries. These belonged to the *militia palatina* and initially, when the corps was created by Constantine, were humble clerks, generally of lowly extraction, like their colleagues on the private market. However, they rapidly rose in importance and rank: under Constantine's heirs the notaries were used for confidential missions and could be promoted to the highest offices. They held military ranks, starting as cadet officers (*protectores* or *domestici*), then rising to be tribunes and finally pretorian tribunes. In Valentinian's time ordinary tribunes and notaries were graded as *consulares*, and the *primicerius notariorum* ranked above vicars: all were *clarissimi*. In 381, under Gratian and Theodosius, the tribunes became *spectabiles* and all notaries were made senators, but were granted exemption from the senatorial tax, the *collatio glebalis*. By the fifth century the notaries had delegated their clerical duties to lower clerks, and while some of them still fulfilled special missions, most simply held the title and privileges, but were not in active attendance at the *palatium* (Jones 1964: 103, 127-128, 143, 161-162, 431, 547-548, 572-575). Possibly the unusual abbreviations, as well as the curious feature of the ethnic attribute being attached not to the dedicator, but to his father' name, may indicate that both men had seen some active service.

Inscription 23 (Figs. 23 and 24)

Slab of white-gray marble, on the western border of the pavement in Area E, ca. 9 m from the northwestern corner.
Unpublished.

Three inscriptions were engraved breadthwise on a slab measuring 153.2×99.5 cm, and 3.4 cm thick. All face west, toward the passageway leading into Area C. No. 23 is engraved in the upper left corner of the slab: on its left, the script is flanked by a decorative sprig. The lines are 50 cm long and the letters are 3-4 cm high. A diagonal stroke is used as an abbreviation sign. The text began with a cross, later obliterated.

+ΕΝΤΩΤΟΠΩΤΟΥΤΩ
ΜΝΗCΘΙΗΗΑΙΑCΜ . Ρ
ΜΑΡΚΓΡΗΓΟΡΙΑΚ
ΠΡΟΚΟΠΙΑΚΕΛΛΑΔΙΑ

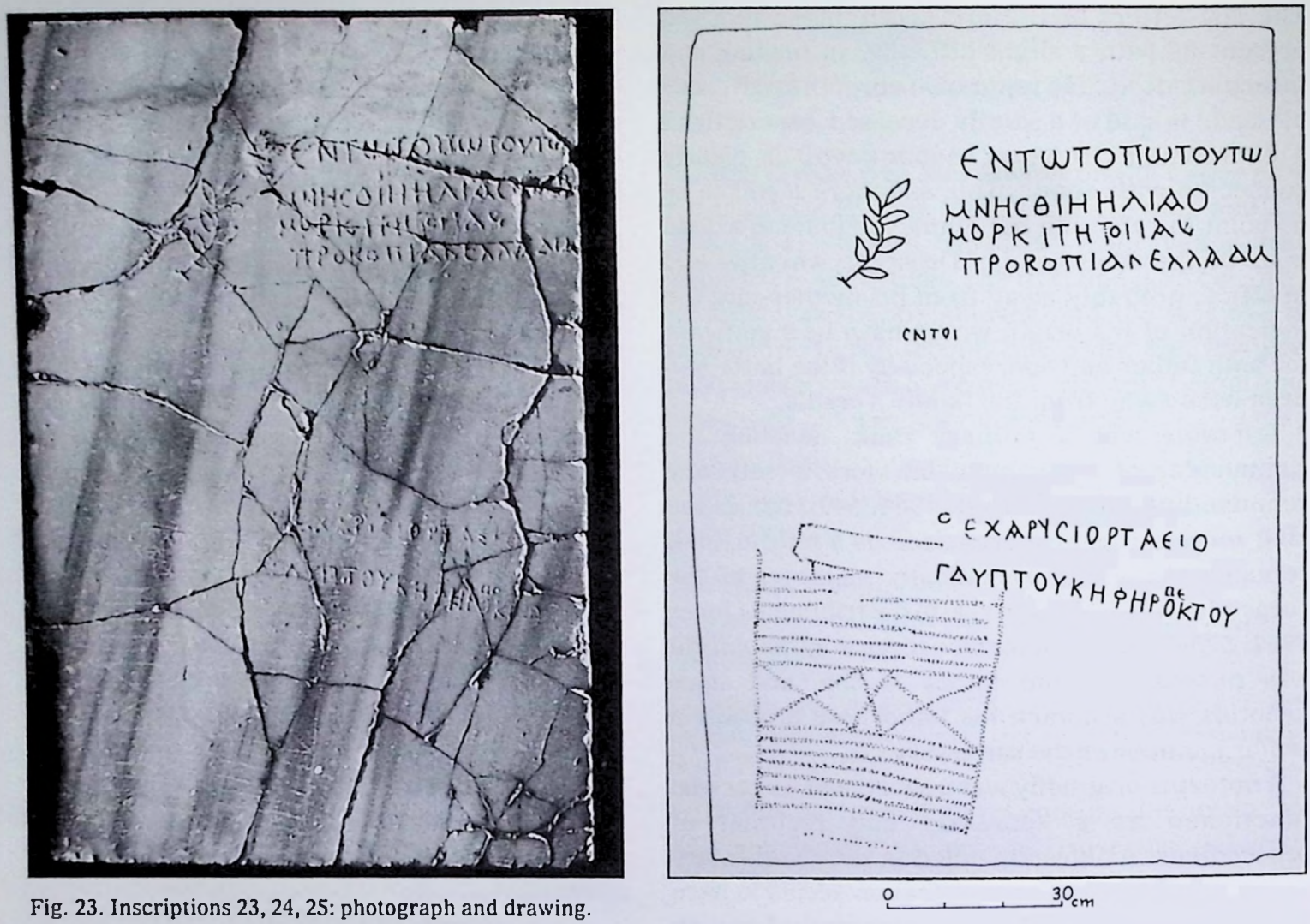


Fig. 23. Inscriptions 23, 24, 25: photograph and drawing.

Ἐν τῷ τόπῳ τούτῳ
μνησθ{ι}ῇ Ἠλίας μ[α]ρ-
μαρ(άριος) κ(αὶ) Γρηγορία κ(αὶ)
4 Προκοπία κ(αὶ) Ἑλλαδία.

In this place may Elias the marble worker be remembered, and Gregoria and Procopia and Helladia.

This inscription is indistinguishable from all the other *proskynemata* in the hall; however, like No. 14, its location suggests that Elias may have been one of the artisans who carried out the work in 455. In this case the inscripton would combine the elements of a blessing and of an artist's signature as well. Artisans often 'signed' their work, as is well known especially from mosaics. A μαρμαράριος 'signed' a carved capital of a synagogue in Tiberias, adding a prayer (Hüttenmeister and Reeg 1977: 440; Roth-Gerson 1987: 58, no. 14); another, calling himself a 'master marble worker' (πρωτομαρμαράριος), inscribed a *proskynema* on the wall of the Patriarchs' enclosure in Hebron (Vincent, Mackay and Abel 1923: 161, fig. 68; *SEG* 8, no. 240).

Inscription 24 (Figs. 23 and 24)

On the same slab as No. 23.
Unpublished.

The beginning of a second inscription was engraved underneath No. 23, but after only five letters the stonecutter abandoned the undertaking, perhaps realizing he had made a mistake. The letters are ca. 2 cm high and read only: ΕΝΤΟΙ, clearly the beginning of the costumary formula: Ἐν τῷ ἁγίῳ τόπῳ μνησθῇ ...

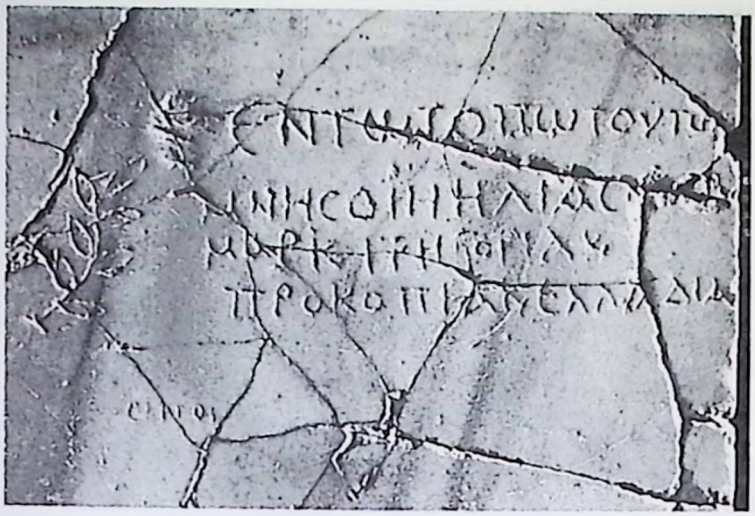


Fig. 24. Detail of Inscriptions 23 and 24.

Inscription 25 (Figs. 23 and 25)

On the same slab as Nos. 23-24.
Unpublished.

A third inscription was engraved in the lower half of the slab. The script is roughly carved and the lines, 50 cm long, are uneven and slope diagonally to the right. The letters are 2-3 cm high. Two letters were omitted and added as an afterthought above the line. The spelling is as slovenly as the engraving.

ЄIЄXAPICIOPTACIO.
2 ΓΛΥΠΤΟΥΚΗΦΗΡΟΠΕΚΤΟΥ

Εἴε χάρις Ἰορτασίο[υ]
2 γλύπτου κὴ (σ)φηροπέκτου.



Fig. 25. Detail of Inscription 25.

L. 2 KH stands for καί: the K seems to have a tiny abbreviation mark, but this is either a scratch or a mistake of the stonecutter.

> May (God's) grace be with Heortasius, the engraver and juggler.

ΦΗΡΟΠΕΚΤΟΥ is a mispelling of σφαιροπαίκτου: the loss of the *sigma* before *phi* is not unknown (e.g., φαιρωτήρ for σφαιρωτήρ) (Liddell and Scott 1968, s.v.); the rest is plain phonetic spelling. The term γλύπτης refers to an artisan who carved with a chisel (γλυπτήρ), i.e. an engraver (of precious stones for seals) or even a sculptor; but, since γλύμμα means also 'inscription,' there is little doubt that the artisan referred to was one of the stoneworkers who engraved the inscriptions in the baths complex. Heortasius doubled as a juggler for the entertainment of the visitors: one hopes he was better with a ball than with a chisel. The name Ἑορτάσιος is a direct translation of the Hebrew name חגי (Haggay),[21] and it is conceivable that the engraver-juggler may have been a Jew. A similar formula of blessing Ἡ Θεοῦ χάρις μετὰ Ἀβραμίου μαρμα(ρα)ρίου) was used by the marble worker of Tiberias mentioned above (Hüttenmeister and Reeg 1977: 440; Roth-Gerson 1987: 58, no. 14).

Inscription 26 (Fig. 26)

Slab of white-gray veined marble, adjoining No. 25 on the east.
Unpublished.

The inscription is beautifully engraved on a slab 99.5 cm high, 50.4 cm wide and 3.6 cm thick. The lines are 43 cm long, and the letters are 4.5-6 cm high. The script, facing south, is surmounted by a palm leaf, and a similar decoration closes the last line. A short horizontal stroke is used as an abbreviation mark for the *nomen sacrum*.

XP̄CTEBOHΘI	Χρ(ι)στὲ βοήθ(ε)ι
CIPIKIΩTΩ	Σιρικίῳ τῷ
MAΓICTPIA	μαγιστρια-
4 NΩTΩIΓAZAI	νῷ τῷ Γαζαί-
ΩKAIANTΩ	ῳ καὶ Ἀντω-
NINΩ (palm leaf)	νίνῳ.

> Christ, help Siricius the Gazean *agens in rebus*, and Antoninus.

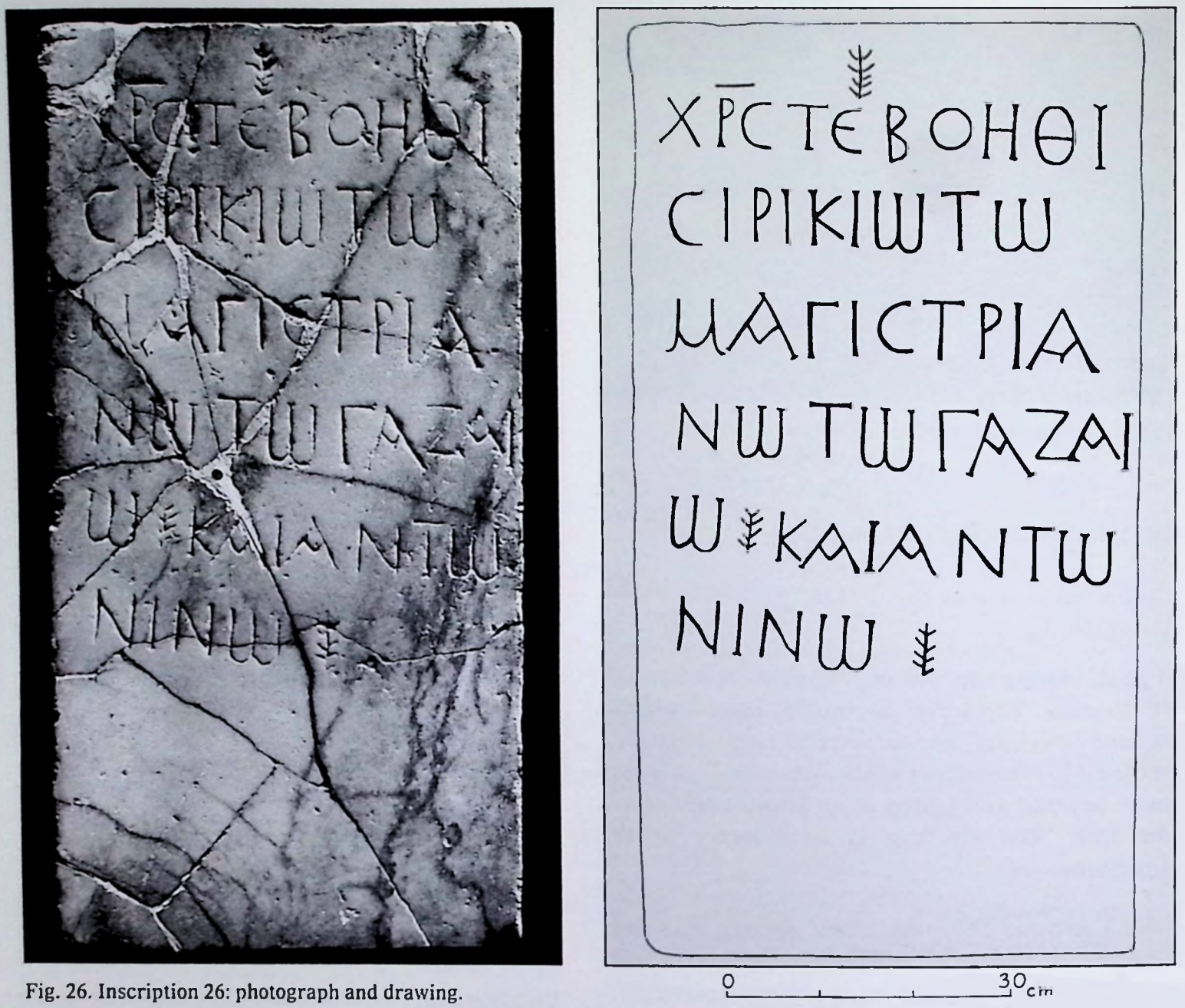


Fig. 26. Inscription 26: photograph and drawing.

The imperial couriers, *agentes in rebus*, were known by the term μαγιστριανοί, as they were closely attached to the *magister officiorum*. The corps was formed under Constantine, or possibly even earlier, in Diocletian's time. They formed a *militia palatina* and were organized as a cavalry regiment, starting as troopers (*equites*) and passing through the noncommissioned grades up to *ducenarius*. Soon they became important as confidential agents of the imperial government, especially the senior members of the corps, who were sent out to the provinces as inspectors of the post (*curiosi*): as such, they earned the reputation of government spies and were much hated by the provincials. At the peak of their career, the *agentes in rebus* were appointed as director generals (*principes*) in the offices of the prefects and of some provincial governors; in the eastern part of the empire they were also sent to certain military offices, those of the *comes Aegypti* and of the *duces* of the eastern frontier. These posts were influential and highly lucrative, and their holders were rewarded with a title on retirement: first the clarissimate, then, from 426, the rank of *spectabilis*. By the fifth century, however, the number of *agentes in rebus* had become inflated and their promotion slower (Jones 1964: 103-104, 128-129, 547-549, 578-581). While in the late fourth

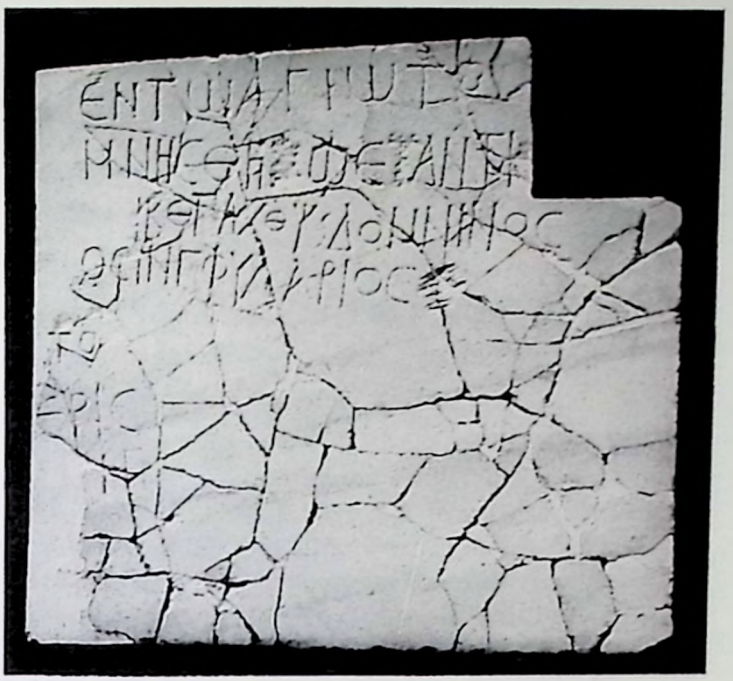
century, the *agentes in rebus* might complete their one or two years of *principatus* at a fairly young age, and proceed to a more prestigious career – notary or even provincial governor – in 417 they had to serve a minimum of 20 years in order to retire with the honorary rank of *princeps*, without seeing active service in this office (*CTh* 6, 27, 19). In 435 the qualifying period was lengthened to 25 years (*CTh* 6, 28, 8). Still their prospects were good, and they received handsome financial rewards – both legitimate and illicit.[22] In 438 Theodosius II debarred Jews and Samaritans from public service, including the office of *agentes in rebus* (Novella III).[23]

A μαγιστριανός is mentioned in two inscriptions from Gerasa dated 533, pertaining to the erection of a building connected with the water supply (Welles 1938: 469-470, nos. 277-278). He is styled τοποτηρητής, an administrator in charge of the city on behalf of the governor. The mention of Siricius' home, Gaza, does not mean that he held a post in that city: however, this cannot be excluded. Among the task of the *agentes in rebus* was also the control of maritime traffic.

Inscription 27 (Fig. 27)

Slab of whitish-gray marble, adjoining No. 26 on the east.
Unpublished.

Two inscriptions are engraved on a slab 99.6 cm high, 104 cm long in its present state, and 2.3 cm thick. The left side of the plaque is missing, as well as the upper right corner: part of it may have been hewn off in antiquity, since the first line is seemingly arranged to fit into the available space and ends with an ivy leaf serving as an abbreviation mark. The third line is 76 cm long. The script is oriented to the south, toward the center of the hall. The letters are exceptionally large (7-10 cm), sharply chiselled and elegantly shaped, although they are marred by cuts that disfigure several characters, transforming *sigma* into *epsilon*, *omicron* into *theta*, *ypsilon* into *psi* and making the reading somewhat uncertain. Two letters, *kappa* and *tau*, are also defaced by hammering, as well as the cross that marked the end of the text. There



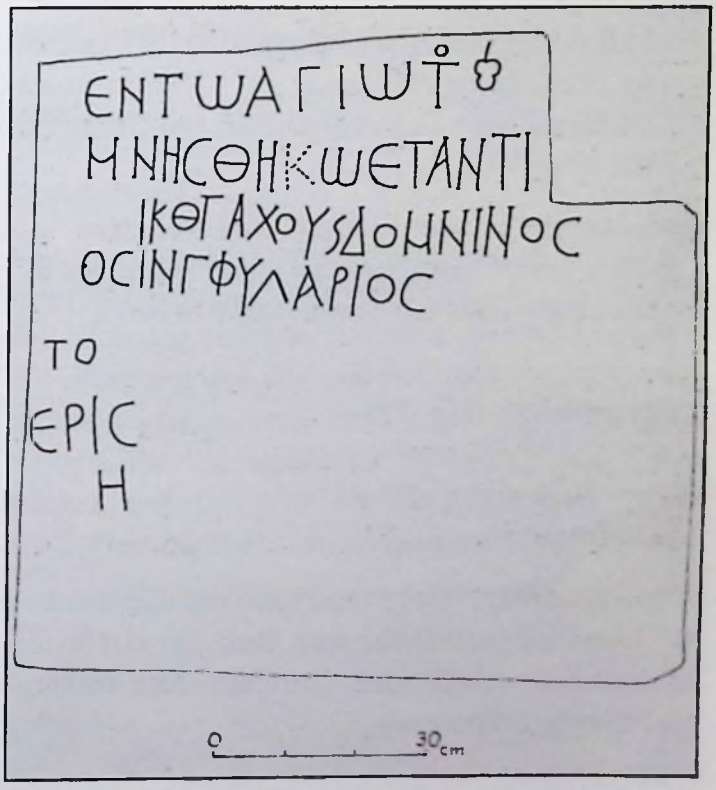


Fig. 27. Inscriptions 27-28: photograph and drawing.

seems to be no link between the two kinds of damage, which were made with different tools; on the other hand, in both cases the defacement seems intentional. The cuts may perhaps be explained as either a series of errors, or a willful act of spite due to the professional jealousy of a rival stoneworker. As to the *tau* and *kappa*, their defacement may perhaps be conceived as a case of iconoclasm: the symbolic significance of these letters for the Christians was well known.[24]

ΕΝΤΩΑΓΙΩ̊Τ(haedera)
ΜΝΗCΘΗΚΩΕΤΑΝΤΙ- -
- - ΙΚΘΙΑΧΘΨSΔΟΜΝΙΝΟC
4 ΟCΙΝΓΟΥΛΑΡΙΟC+

Ἐν τῷ ἁγίῳ τό(πῳ)
μνησθῇ Κωσ›ταντῖ[νος ?]
- - ΙΚΘΙΑΧΘΨ (καὶ) Δομνῖνος
4 ὁ σινγουλάριος.

L. 2 Κωσ›ταντῖ[νος or Κωστάντ[ιος] or Κωστάντ[ης]
L. 3 - ΙΚΘΙΑΧΟΨ or - ΙΚΟΤΑΧΟΥ are the most reasonable combinations: perhaps a personal name Ν]ικοταχοῦ or ἰκθιακόψ, ἰκθιαχοῦ for ἰχθυακόψ, ἰχθυακοῦ, 'fish-eyed'? son of a fisherman? son of a fish-toll collector? In this case the gap at the beginning of l. 2 must contain the last two letters of Κωσταντι[νος] and l .1 is be considered complete. Or should we surmise a mistake and read [Ν]ικοφώχου as a *lectio facilior*?

In this holy place may Constantine (or Constans or Constantius) (son) of [N]icotachos (Nicomachos?) be remembered, and Domninus the *singularis*.

[Ν]ικοταχοῦ is the reading that requires less arbitrary corrections, but the name is unknown.[25] On the *singulares*, see commentary to No. 3.

Inscription 28 (Fig. 27)

On the same slab as No. 27.
Unpublished.

A second, fragmentary inscription is engraved on the lower left side of the slab. Only the last letters of three lines can be read. The characters are large and clearly shaped.

- - - TO
2 - - - - EPIC
- - - - - - H

L.2 [Ἱ]έρι(ο)ς, personal name?

A Ἱέριος is mentioned in No. 55.

Inscription 29 (Fig. 28)

Slab of white-gray veined marble, on the eastern border of the pavement of Area E.
Unpublished.

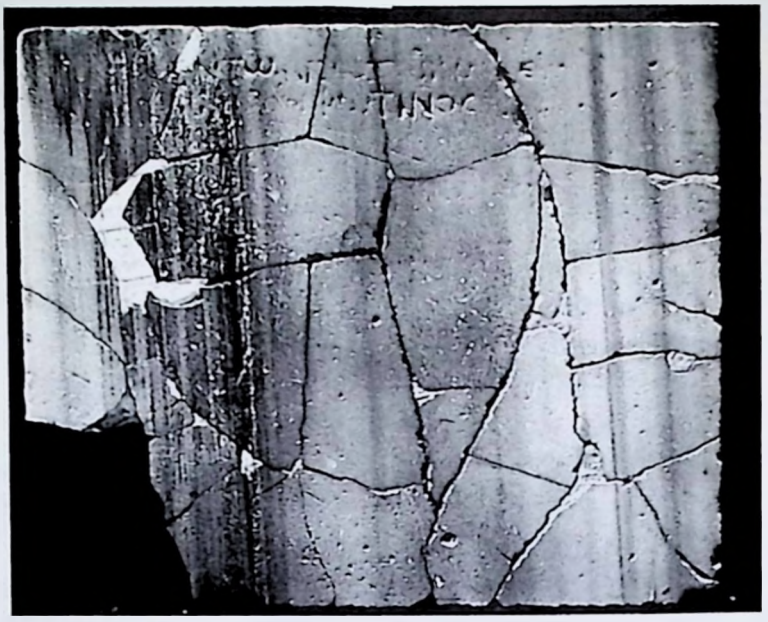




Fig. 28. Inscription 29: photograph and drawing.

A two-line inscription is engraved along the upper edge of a slab 99 cm high, 110.5 cm long and 5.1 cm thick. The lines are 60 cm long and the characters are 3-5 cm high; the script faces south. On the right, ca. 10 cm from the end of the first line, a solitary *epsilon* is engraved; perhaps the stonecutter intended to carve a second text near the upper right corner of the plaque, but changed his mind.

ΕΝΤΩΑΓΙΩΤΟΠΩ — Ἐν τῷ ἁγίῳ τόπῳ
2 ΜΝΗCΘΗΦΩΤΙΝΟC — μνησθῇ Φωτῖνος.

In this holy place may Photinus be remembered.

Photinus is a not an uncommon name, but, by a curious chance, the only other Photinus mentioned in Palestinian inscriptions of the Byzantine period is a bishop of Ptolemais in 485/6.[26] Surely it would be too much of a coincidence to find the same man at Hammat Gader; on the other hand, one cannot rule out the possibility that Photinus visited the site in the fifties or sixties of the fifth century, before becoming a bishop, and left a memento of his visit on the pavement of the baths complex.

Inscription 30 (Fig. 29)

Slab of white-gray veined marble, adjoining No. 23 on the south.
Unpublished.

The inscription is carefully engraved along the upper edge of a slab 105.7 cm high, 150 cm long and 3.8 cm thick. The lines are 70 cm long and the letters are 4 cm high. The script faces south. Several abbreviations are used: lifted letters, a diagonal stroke, tiny *stigma* marks hanging from the lower tip of K for καί. A cross, later obliterated, was engraved under the script, visibly displaced to the left of the script and the axis of the plaque as well.



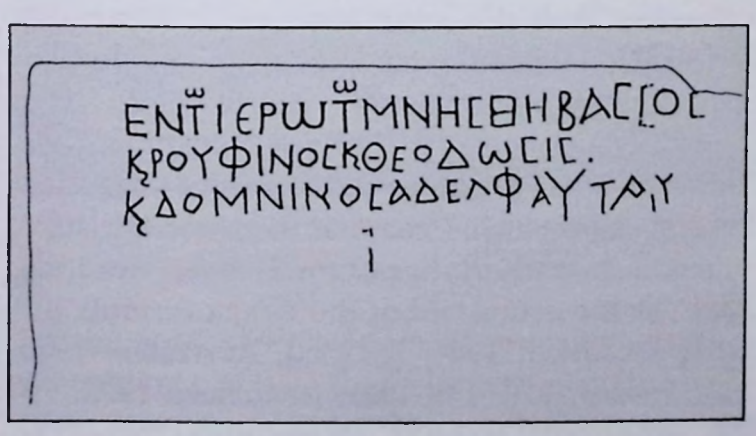


Fig. 29. Inscription 30: photograph and drawing.

ENTIEPWTMNHCΘHBAC . OC
2 KsPOYΦINOCKsΘEOΔWCIC
KsΔOMNINOCAΔEΛΦAYTOY
+

Ἐν τῷ ἱερῷ τ(όπ)ῳ μνησθῇ Βάσ[σ]ος
2 κ(αὶ) Ῥουφῖνος κ(αὶ) Θεοδώσι(ο)ς
κ(αὶ) Δομνῖνος ἀδελφ(οὶ) αὐτοῦ.

L. 3 ἀδελφ(ός)? In this case it would refer only to the last name of the list

In this sacred place, may Bassus be remembered, and Rufinus and Theodosius and Domninus his brothers.

Inscription 31 (Fig. 30)

Slab of white-gray marble, adjoining the south-eastern corner of No. 30.
Unpublished.

The inscription is symmetrically arranged in the form of a triangle, with lines of decreasing length and widening margins. A cross makes up the length of the second line and another forms the lower tip of the triangle; both were obliterated by hammering. The slab measures 79×74.5 cm and 3.8 cm thick. L. 1 of the script is 58 cm long and the letters are 7-9 cm high. The script is oriented to the south.

	AYΞITWΠEPΓH	Αὐξίτω Πέργη,
	HΠPWTH+	ἡ πρώτη
	THCΠAM	τῆς Παμ-
4	ΦY	φυ-
	ΛI	λί-
	AC	ας.
	+	

Prosper Perge, the capital of Pamphylia!

Αὔ[ξι, αὐξίτω, with vocative or nominative, is an acclamation formula addressed to persons, parties and cities, especially common in the fourth century, though it was also in use in the early Roman as well as in the Byzantine period (Clermont-Ganneau 1906: 208-210; Robert 1960: 23-24; Mitchell 1977: 91-92).[27] Undoubtedly the inscription was dictated by a patriotic citizen of Perge.





Fig. 30. Inscription 31: photograph and drawing.

Inscription 32 (Fig. 31)

Slab of white marble with gray veins, adjoining No. 31 on the south.
Unpublished.

The inscription is carefully engraved on a slab 90.2 cm high, 177 cm long and 4.5 cm thick. The lines are 85 cm long and face south; the letters average 5.5 cm in height. The script is surmounted by the monogram ΧΜΓ. Though the inscription is much worn by the rubbing of feet, the excellent quality of the writing is still evident.

ΧΜΓ
ΚΥΡΙΕΒΟΗΘΙΦΙΛΟΛΟΓΙΩ
ΤΩΜΑΓΙΣΤΡΙΑΝΩΚΑΙ
4 ΖΗΝΩΝΙΤΩΑΔΕΛΦΩΑΥΤΟΥ

χμγ΄ or: Χ(ριστός), Μ(ιχαήλ), Γ(αβριήλ)
or: Χ(ριστὸς) (ὁ ἐκ) Μ(αρίας) γ(εννεθείς)
Κύριε βοήθ(ε)ι Φιλολογίῳ
τῷ μαγιστριανῷ καὶ
4 Ζήνωνι τῷ ἀδελφῷ αὐτοῦ.

God helps (or: Christ Michael Gabriel, or: Christ born of Mary). O Lord, help Philologius the *agens in rebus* and his brother Zeno.

Several explanations have been advanced for the abbreviation ΧΜΓ: Χ(ριστὸς) (ὁ ἐκ) Μ(αρίας) γ(εννεθείς) – or a slight variant: Χ(ριστὸς) Μ(αρίας) γ(εννά), Χ(ριστὸν) Μ(αρία) γ(εννᾷ) – or Χ(ριστός), Μ(ιχαήλ), Γ(αβριήλ) are the most widely accepted. Jalabert and Mouterde (1939: 152-154) collected a rich documentation and concluded that ΧΜΓ had a different meaning in Egypt, where the formulas alluding to Christ's birth from Mary are attested (Leclercq 1924a: 180-182; 1924b: 1690-1696), and in the Byzantine East, including Syria; Χριστός, Μιχαήλ, Γαβριήλ appears at least once written in full in an inscription from Greece (Bayet 1878: 31). Testa (1962: 259) concurred with this view, and saw in Χ(ριστός), Μ(ιχαήλ), Γ(αβριήλ) an expression of Jewish-Christian beliefs, which would have been especially widespread in the Syro-Palestinian area. However, other possible readings were suggested: several isopsephisms, some of them not Christian, or a pseudo-transcription of the Hebrew word אחד, 'One', as the equivalent of the Greek formula Εἷς Θεός (Perdrizet 1904: 357-360; Avi-Yonah 1940: 111; Tjäder 1970: 148-190); Blanchard 1975: 19-24). Blanchard rejected all solutions based on isopsephism, but the same uncertainty exists also



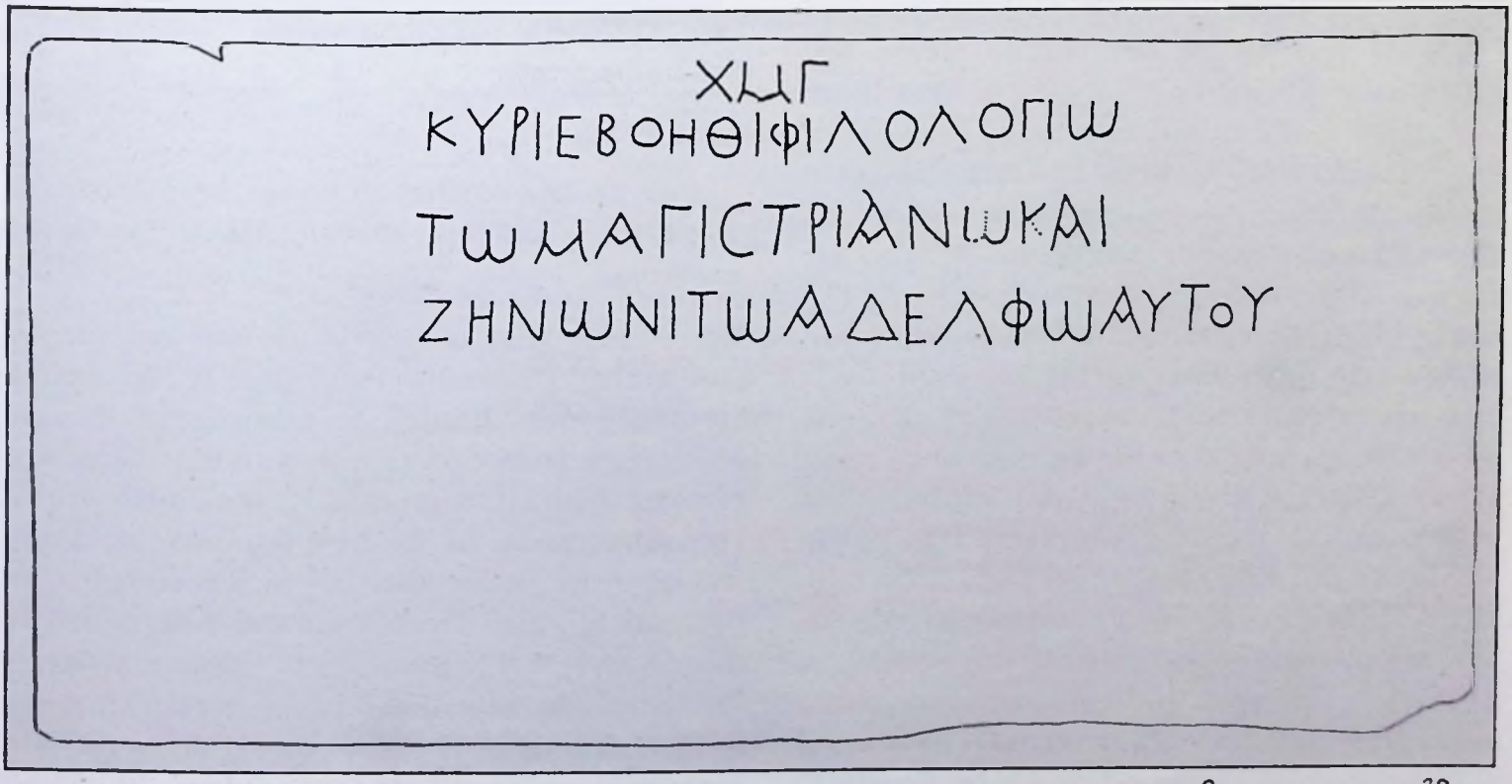


Fig. 31. Inscription 32: photograph and drawing.

for the solutions based on abbreviation, none of which can be proven true. The symbol probably did have several different interpretations, and not necessarily for Christians alone: it cannot be excluded that pagans, Gnostics and/or Jews – all known to have employed isopsephism – had their own use for this monogram, prior to its appropriation by Christians. This would explain the

occurrence of ΧΜΓ in some inscriptions that lack anything that identifies them as Christian.

The monogram ΧΜΓ is common in inscriptions from Syria and Hauran, and somewhat less common in Transjordan; in Palestine it is rare. Besides the present example and a single occurrence in the Negev[28] (in a Christian context, on two stones in the citadel of 'Avdat: Negev 1981: 42, nos. 40-41), the only other example known to me is engraved on the door of a tomb in Samaria, as an addition to the formula Εἷς Θεὸς μόνος: in the tomb there are no crosses or any Christian symbols (Conder 1849: 201). Commenting on this text, Bagatti (1979: 136) considered it Christian and chose the explanation Χ(ριστός), Μ(ιχαήλ), Γ(αβριήλ) as more fitting to the Jewish background of Palestine. However, in that case the background cannot have been Jewish, but, in view of the geographical location, could only have been Samaritan (Di Segni 1994: 100). As the Samaritans did not share the angelology of Jews and Jewish Christians (Fossum 1993), there is no reason to read ΧΜΓ as referring to the angels, and the lack of Christian symbols in the burials makes any reference to Christ doubtful. On the other hand, ΧΜΓ, taken as the number 643, can be the *psephos* of Θεὸς βοηθός, a formula often found in synagogue inscriptions in Palestine and in the Diaspora (e.g., Lifshitz 1967b: 55, no. 70; 74, no. 84; 77, nos. 88-89) and analogous to the formula Εἷς Θεὸς βοήθει that appears in Jewish and Samaritan contexts (Di Segni 1994: 111-114).

In our inscription it is noteworthy that the dedicator did not follow the example of so many other visitors who adorned with crosses their inscriptions on the same pavement. Was this in obedience to Theodosius' edict of 427 (*CTh* 1, 8), that forbade the depiction of crosses on pavements, where they could be trod upon? Or was Philologius perhaps a Jew or a Samaritan, who saw in the monogram an invocation of his own God? Admittedly, access to the *militia* had been closed to the Jews since 418 (*CTh* 16. 8, 24), but, even if the law was strictly applied, Samaritans were not explicitly included in the ban. In fact, Samaritans are still found in public office in the early sixth century, in spite of the Theodosian Novella III published in 438.[29]

Inscription 33 (Fig. 32)

Slab of white marble, near the center of the pavement in Area E.
Between 451 and 457.
Di Segni 1992: 311, 320, Fig. 2.

The inscription is engraved on a slab 91.2 cm high, 152.7 cm long and 3.2 cm thick. The script is arranged lengthwise near the southern edge of the stone and faces south. The first and third lines are 118 cm long, the second is slightly shorter and the fourth is short, centered, and ends with a decorative bud. The left margin is flush and the stonecutter took care not to break words. The letters are 2-4 cm high.

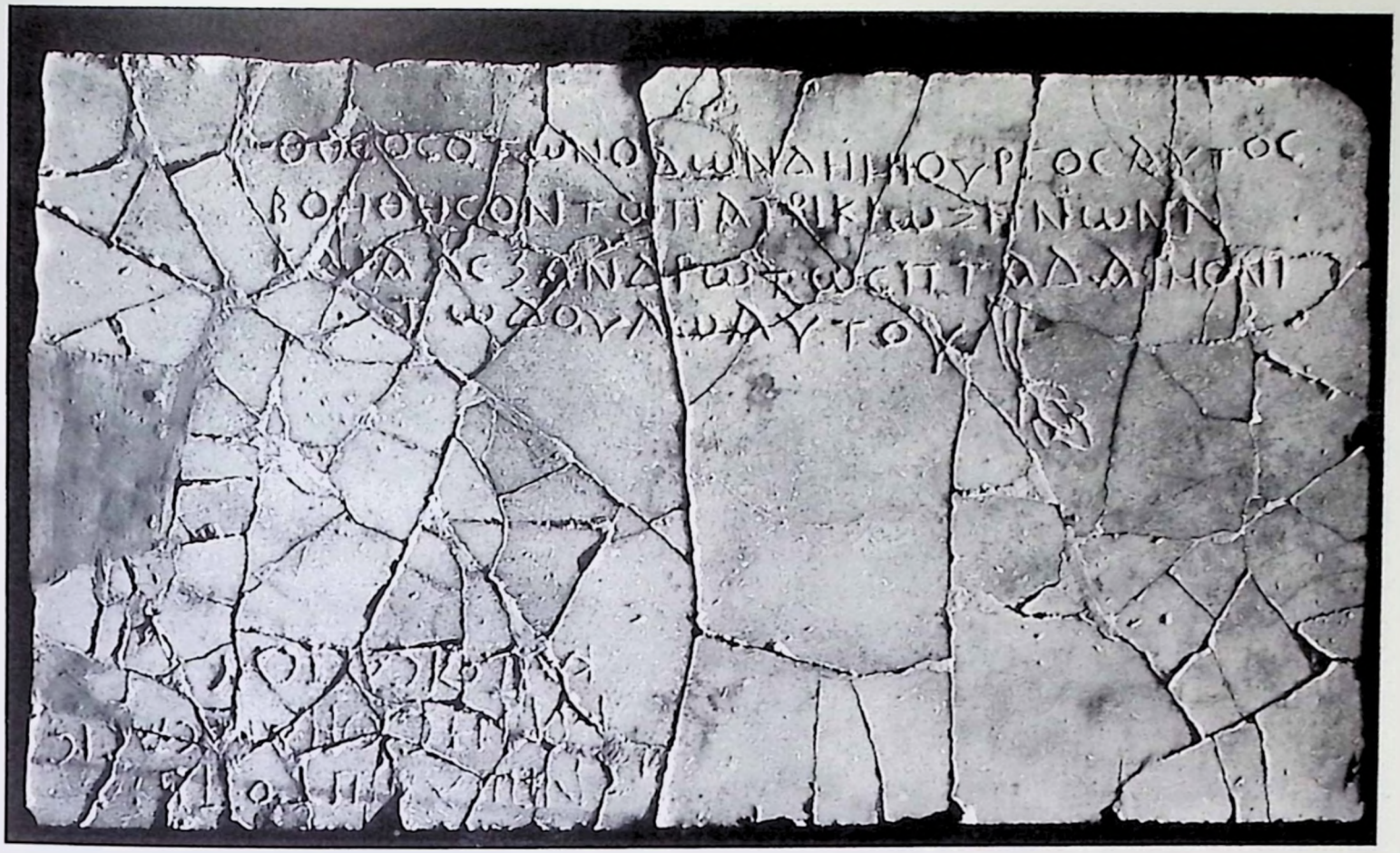
ΟΘΕΟCΟΤΩΝΟΛΩΝΔΗΜΙΟΥΡΓΟCΑΥΤΟC
ΒΟΗΘΗCΟΝΤΩΠΑΤΡΙΚΙΩΖΗΝΟΝΙ
ΚΑΙΑΛΕΞΑΝΔΡΩΤΩΕΠΤΑΔΑΙΜΟΝΙ
4 ΤΩΔΟΥΛΩΑΥΤΟΥ

Ὁ θεὸς ὁ τῶν ὅλων δημιοῦργος αὐτὸς
βοήθησον τῷ πατρικίῳ Ζήνονι
καὶ Ἀλεξάνδρῳ τῷ ἑπταδαίμονι
4 τῷ δούλῳ αὐτοῦ.

L. 1 cf. III Macc. 2, 3

> God, he who created all things, help Zenon the patrician and his servant Alexander 'seven devils.'

The ancient title of *patricius* was revived by Constantine. Under the Principate it had been a hereditary title granted to families of the old aristocracy; from Constantine's time it became a personal distinction, granted by the emperor on a very select basis. In the new senatory hierarchy laid down by Valentinian I – in the complicated structure of which precedence was determined by the tenure, actual or honorary, of imperial offices – the patricians held the highest grade after the former ordinary consuls. Until the mid-fifth century the patriciate was very sparingly bestowed, and even under Zeno (474-491) the recipients had to be former consuls or prefects (*urbi* or *praetorio*) (Jones 1964: 106, 528, 534). No pretorian or urban prefects called Zeno are known. During the fifth and sixth centuries, only two men by the name of Zeno held the consulate: the



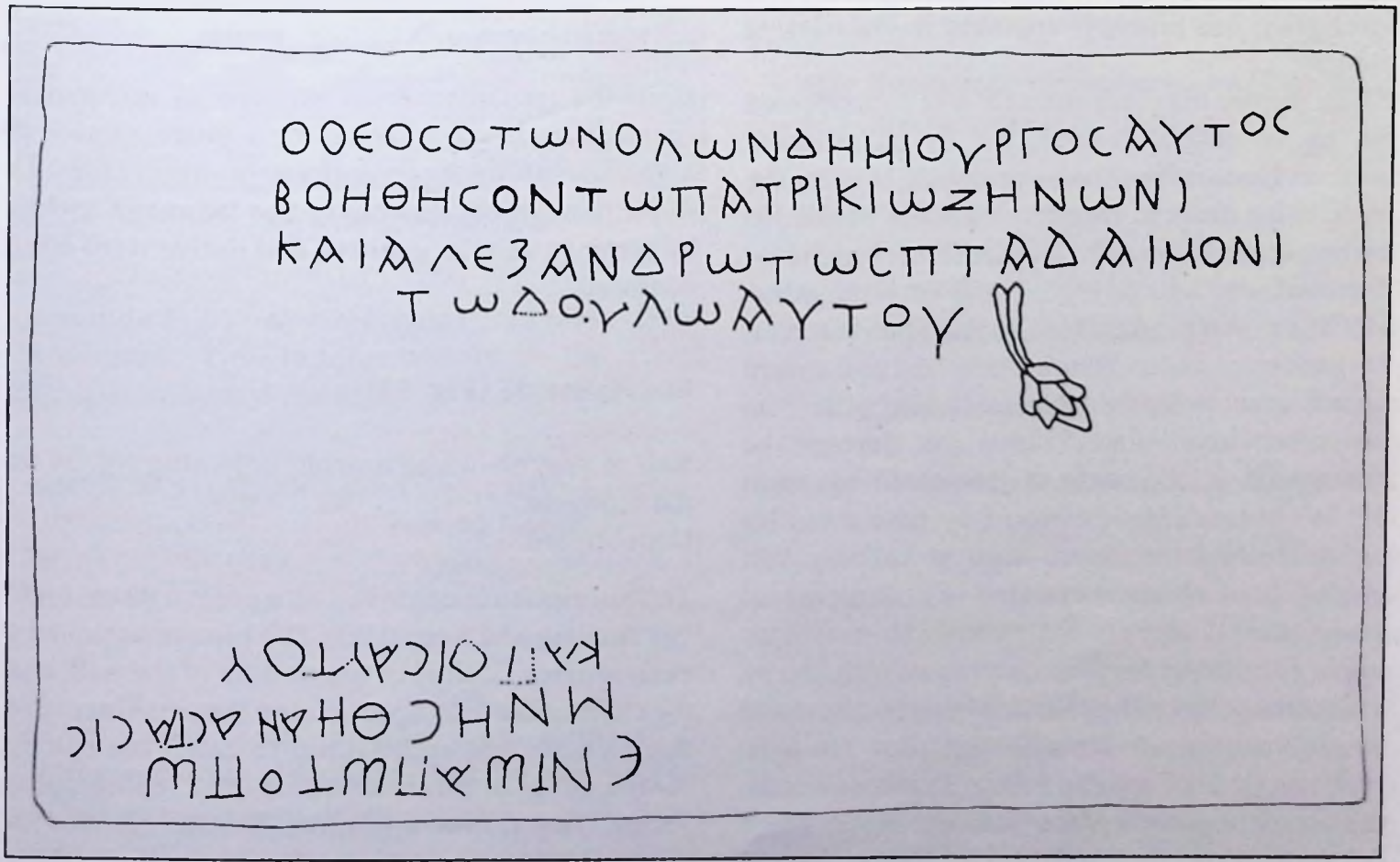


Fig. 32. Inscriptions 33-34: photograph and drawing.

Isaurian emperor, who was consul thrice, once before his accession to the throne, in 469, then in 475 and 479, and Flavius Zeno in 448, another distinguished Isaurian general who was *magister militum per Orientem* between 447 and 451, and achieved the patriciate on leaving his post in early 451. Zeno retired under a shadow and held no other office under the new emperor, Marcian (Martindale 1980: 1199-1200). The dedicator of the inscription calls himself a *patricius*, but does not mention any title of office, which makes his identification with the former *magister militum* very likely. Members of the aristocracy who had become *persona non grata* at the Byzantine court were often bundled off to the Holy Land. Thus in all likelihood Zeno came as a private citizen after his retirement, and his visit must be dated between 451 and his death, which occurred during Marcianus' reign (August 25, 450-January 26, 457) (Iordanes, *Romana* 333: 43). This is in good accord with the date assigned to the pavement by No. 2. It is worth noting that Zeno's dedication was inscribed on a slab directly adjoining the central flagstone of the hall, which was not recovered (see Fig. 1). The official building inscription was probably engraved on the missing plaque.

The former *magister militum* was accompanied not by an official retinue, but by his personal servant. He must have had a strong affection for the man, if he chose to mention his name beside his own. The servant's curious nickname – Ἑπταδαίμων or 'Seven devils'-merits some attention. One possible explanation is that Alexander had been Zeno's squire and had gained his sobriquet by his wild fearlessness in battle.[30] On the other hand, ἑπταδαίμων can perhaps be understood in the sense of 'possessed by seven devils': in this case, the man may have owed his nickname to some illness, such as epilepsy, that might have been regarded as demoniacal possession. If so, it is not unthinkable that Zeno might have taken his favorite servant with him on a pilgrimage to the Holy Land, hoping that he would be delivered from his affliction. Not far from Hammat Gader Christian pilgrims visited Chorsia, the site of the miracle of the Gadarene swine, where Jesus had cast out a legion of devils from a possessed man into a herd of pigs (Matt. 8: 28-34; Mark 5: 1-17; Luke 8: 26-37).[31] Perhaps master and servant followed Jesus' itinerary from Galilee to the region of Gadara, on the way visiting the renown healing springs at Hammat Gader.

Inscription 34 (Fig. 32)

On the same slab as No. 33.
Unpublished.

A second inscription was engraved upside down (facing north) in the lower left corner of the slab. It consists of three lines, 56 cm long; the letters average 4 cm in height. The lines are not quite straight and the quality of the engraving is not as good as in No. 33; moreover, the Greek is vernacular. It seems, therefore, that this inscription was added by a different hand and probably at a later time.

ΕΝΤΩΑΓΙΩΤΟΠΩ	Ἐν τῷ ἁγίῳ τόπῳ
2 ΜΝΗCΘΗΑΝΑCΤΑCΙC	μνησθῇ Ἀναστάσι(ο)ς
ΚΑΙΤΟΙCΑΥΤΟΥ	καὶ τοῖς αὐτοῦ.

In this holy place may Anastasius be remembered, and his household.

Here the transition from passive to impersonal construction is accompanied by a dative, instead of a genitive as we have noticed in other cases. In Byzantine Greek, especially the language spoken by common people, genitive and dative were often confused.

Inscription 35 (Fig. 33)

Slab of grayish-white marble adjoining No. 34 on the southeast.
Unpublished.

The inscription is engraved on a plaque 89 cm high, 165 cm long and 4 cm thick. The plaque occupied a central place, almost in the middle of the hall, and the stonecutter fully appreciated the prominence of this location and endeavored to catch the eye by means of a decorative frame and calligraphic script. The frame measures 51×71 cm and is similar to the one enclosing No. 3; the lines of the script are 58 cm long, and are surmounted and



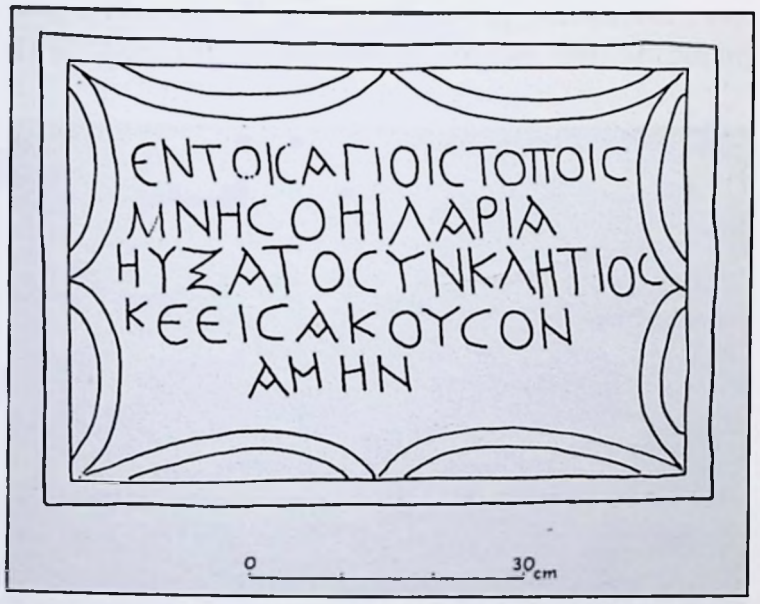


Fig. 33. Inscription 35: photograph and drawing.

concluded by symmetrical crosses, later obliterated. The letters belong to the round alphabet and are 4 cm high.

\+

ΕΝΤΟΙCΑΓΙΟΙCΤΟΠΟΙC	Ἐν τοῖς ἁγίοις τόποις
ΜΝΗCΘΗΙΛΑΡΙΑ	μνησθῇ Ἰλαρία.
ΗΥΞΑΤΟCΥΝΚΛΗΤΙΟC	Ηὔξατο Συνκλήτιος·
ΚΕΕΙCΑΚΟΥCΟΝ	Κ(ύρι)ε εἰσάκουσον.
ΑΜΗΝ	Ἀμήν.

\+

In these holy places may Hilaria be remembered. Syncletius uttered this prayer: hearken, O Lord! Amen.

The name Syncletius is uncommon. A governor bearing this name is mentioned in an inscription, as yet unpublished, discovered at Beth-shean, the capital of *Palaestina Secunda* (Foerster and Tsafrir 1992: 12-13). The feminine form, Syncletica (Συνκλητική), is known in Palestine from a Jewish epitaph from Jaffa (Frey 1952, no. 953).

Inscription 36 (Fig. 34)

Slab of white marble, in the western part of the pavement of Area E, in front of the passageway leading into Area C.
Unpublished.

The inscription is engraved in the middle of a plaque measuring 99.1×78.4 cm, and 3.1 cm thick. The lines are 45 cm long; the letters, carefully incised, are 5-7 cm high. The writing is similar to that of No. 35.

ΜΝΗCΘΗ	Μνησθῇ
ΚΙΒΑΡΟΥC	Κιβαροῦς
ΚΑΙΗΓΑΝΓΑ	καὶ Ἠγάνγα (?)
4 ΚΑΙΟΛΥΜΠΙC	καὶ Ὀλυμπισ-
ΤΑΧΑΚΑΙΜΙΚΚΟC	ταχὰ καὶ Μίκκος.

L. 3 ΗΠΑΝΓΑ ?

May Kibarous be remembered, and Eganga (?) and Olympistacha and Mikkos.

Μίκκος is a well-known Greek name, meaning 'small'.[32] Κιβαροῦς seems a woman's name, probably a feminine form of Κιβύρας or Κιβύρος.[33] Ὀλυμπισταχά in also new, though it may be compared to Ὀλυμπιχός, Ὀλυμπιχά.[34] But Ηγανγα or Ηπανγα not only is unknown, but also sounds frankly odd. The people who joined in writing this inscription must have had a common background: perhaps they were related, or at least fellow-travellers. In any event, chances are that they had a common ethnic origin. Such a concentration of unusual names may suggest a barbarian descent. It is worth noting that, in spite of Mikkos being a purely Greek name, Mikka was regarded as a typical Gothic name: the *Historia Augusta* gives it as a patronymic of the Thracian emperor Maximinus, in order to emphasize his barbarian ancestry (*Scriptores Historiae Augustae* XIX. Iulius Capitolinus: Maximinus 1, 6, vol. II: 3; cf. Ensslin 1941: 1; Schönfeld 1965: 168).



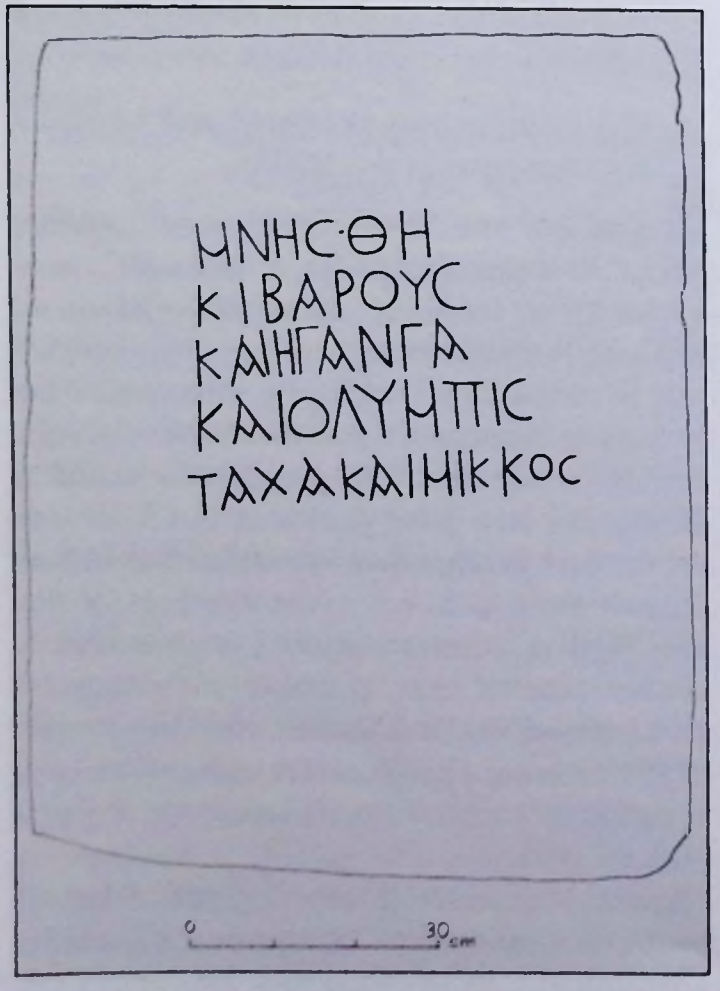
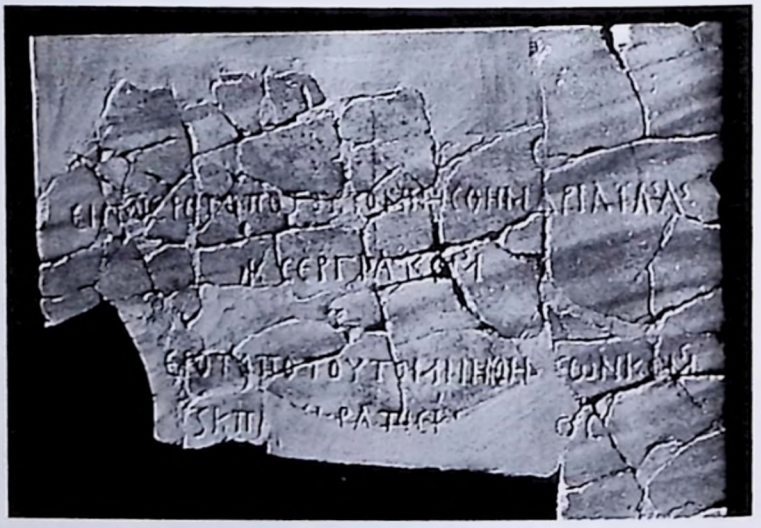


Fig. 34. Inscription 36: photograph and drawing.

Inscription 37 A-B (Fig. 35)

Fragments of a slab of gray-white marble, recovered from Area E.
Unpublished.

Several fragments recovered from the pavement of Area E could be fitted together to restore part of a slab 104 cm high, in its present condition, 106 cm long and 3.8 cm thick. The slab bore two inscriptions separated by a cross. Both texts open with the same formula – not the usual ἐν τῷ ἁγίῳ τόπῳ – and contain the same spelling mistakes, typical of sixth-century phonetical spelling. The script in both is arranged in the same manner and has identical palaeographic characteristics, including the same abbreviation method, with



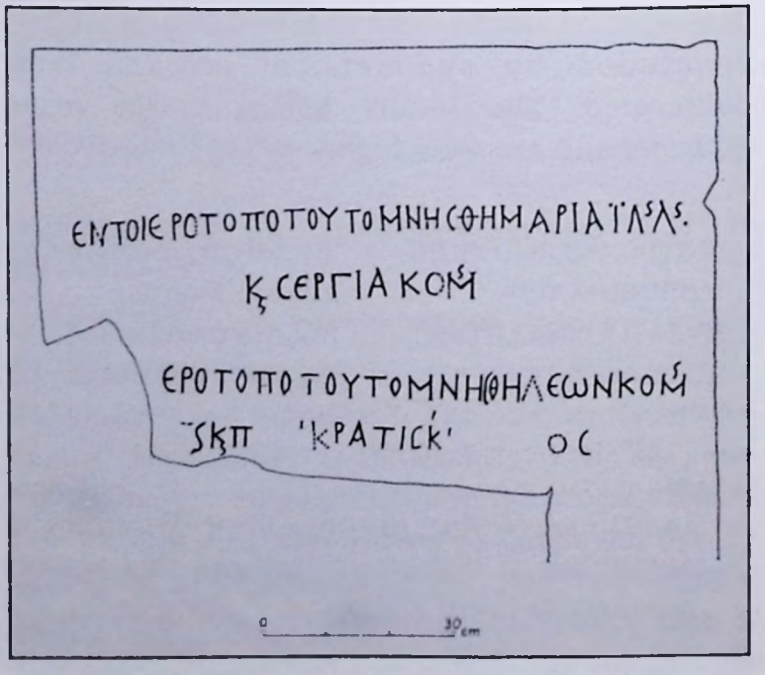


Fig. 35. Inscription 37 A-B: photograph and drawing.

lifted letters and tiny *stigmas*. Clearly both inscriptions were engraved by the same hand and formed two parts of a single dedication.

Part A is set in two lines in the upper half of the slab. The first line is 94 cm long, the second is shorter and centered. Part B, below the cross, is similarly arranged: the first line in its present state is only 80 cm long, but if one takes into account the initial gap, its original length reached ca. 94 cm. The second line, 63 cm long, also lacks the beginning; considering the symmetry, its original length can be restored to ca. 68 cm, leaving a gap of about three letters. The lower edge of the line is also broken and some of the letters are missing. The characters belong to the oval alphabet and are 3-4 cm high.

A ΕΝΤΟΙΕΡΟΤΟΠΟΤΟΥΤΟΜΝΗCΘΗΜΑΡΙΑΙΛˢΛˢ
2 KsCEPΓΙΑΚΟΜˢ
+
B .....ΕΡΟΤΟΠΟΤΟΥΤΟΜΝΗCΘΗ . ΕΩΝΚΟΜˢ
4 ...SKsΠ..ḲPATICKs̩! - - - - - - C

A Ἐν τῷ ἱερῷ τόπῳ τούτῳ μνησθῇ Μαρία ἰλλ(ουστρία)
2 κ(αὶ) Σεργία κομ(ητίσσα).
B [Ἐν τῷ ἱ]ερῷ τόπῳ τούτῳ μνησθῇ [Λ]έων κόμ(ης)
4 [κ(αὶ) ἄρ(χων)] κ(αὶ) Π[αν]κράτι(ο)ς κ(αὶ) [- - - - ο]ς.

L. 4 the first letter of the last name is either I, K, M or N

In this sacred place may Maria the *illustris* be remembered, and Sergia the countess.
In this sacred place may Leo the count [and governor] be remembered, and Pancratius and...

Women were not granted titles in their own right;[35] therefore Maria's and Sergia's rank reflected the position of their respective husbands. Sergia's husband was probably Count Leo; Maria belonged to the highest aristocracy and took precedence over her companion. If the two women were related, Maria may have been Sergia's mother or mother-in-law, the wife or widow of a man of senatorial rank. Membership of the senatorial order was hereditary, but a senator's son began his career as a mere *clarissimus*; the higher grades of the order, *spectabilis*, *illustris* and *gloriosissimus*, could only be achieved by tenure of the appropriate offices, or by imperial grant of equivalent status. From the second half of the fifth century, effective membership of the senate was confined to *illustres*, for whom were also reserved most privileges of the senatorial class.[36] By that time, and still more so under Justinian, senators were relatively few in number and formed a very select body. Since they were technically obliged to attend meetings of the senate, they usually lived in the capital, except of course those who held offices in the provinces, for instance *duces*.[37] Of the few *illustres* and *gloriosissimi* (ἐνδοξότατοι, the *illustres* of the upper grade) that appear in Palestinian inscriptions, several are *duces* or governors who rated the title either by right of office or by personal grant.[38] A family of the senatorial order is known from inscriptions in the so-called monastery of the Lady Mary at Beth Shean, to the construction of which, completed in 553/4, two households contributed: John, a *gloriosissimus* honorary prefect, with his sons the counts, in memory of a deceased relative of *illustris* rank, and the Lady Mary with her son (FitzGerald 1939: 13-15, nos.1-4). There is no reason to identify this lady – who is given no honorary title in spite of the complimentary tone of the inscriptions mentioning her – with the *illustris* who visited Hammat Gader; but the epigraphic material from the monastery illustrates the hierarchical ramifications of a single group of related people.

Given the probable length of the gap in l. 4, κόμ(ης) κ(αὶ) ἄρ(χων) – or possibly κόμ(ης) κ(αὶ) ἡγ(εμών) – is the most logical restoration. Leo was a civil governor, probably of *Palaestina Secunda*, for if he had come from another province, he would have been bound to mention his governorship. Two or possibly three governors of this name are known from inscriptions discovered in Beth Shean: one was the μεγαλοπρεπέστατος ἄρχων who restored the city-wall in the fourth (first?) indiction corresponding to 525/6 or to 522/3 (*SEG* 8, no. 34); another Flavius Leo, 'most magnificent count and governor,' is mentioned in two inscriptions, as yet unpublished, in the mosaic pavement of the *palaestra* of the bathhouse (Mazor 1987/88: 15, 17): however, he cannot be the same person as the Leo who built the city wall, since one of the two texts states that he served in an unknown year corresponding to the ninth indiction. The name Leo was quite common at the time, and even the two

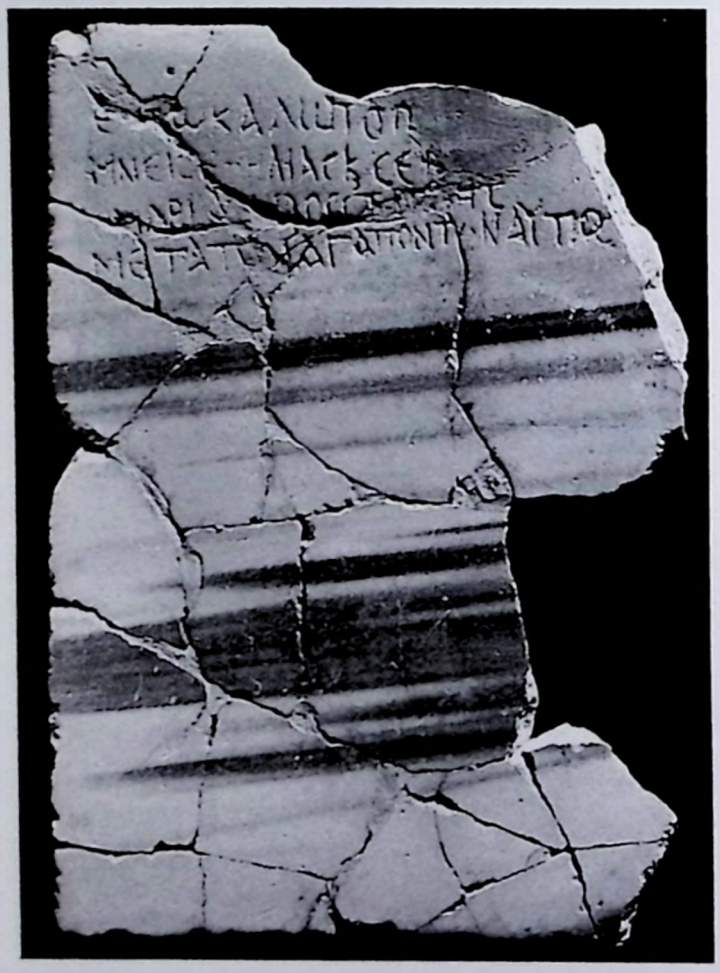
inscriptions in the *palaestra* may refer to two different governors.

Inscription 38 (Fig. 36)

Fragments of a slab of white marble veined with gray, recovered from Area E.
Unpublished.

ΕΝΤΩΚΑΛΩΤΟΠ .
ΜΝΕΙCΘΗΗΛΙΑCKsCEΒ .
ϘΜΑΡΙΑ . ΒΟCCΤΡ. . ΗC
4 ΜΕΤΑΤΩΝΑΓΑΠΟΝΤΩΝΑΥΤΟ. .

Ἐν τῷ καλῷ τόπ[ῳ]
μνεισθῇ Ἠλίας κ(αὶ) σεβ[ί-]
ο(υ) Μαρία[ς] Βοσ{σ}τρ[ην]ῆς
4 μετὰ τῶν ἀγαπόντων αὐτο[ύς].



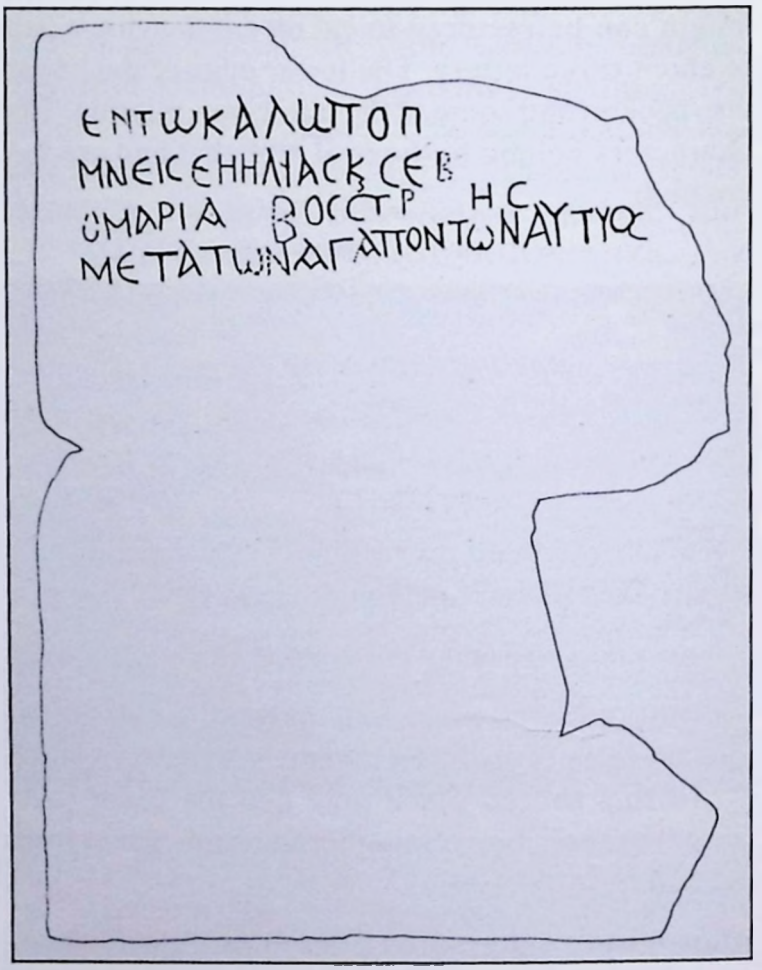


Fig. 36. Inscription 38: photograph and drawing.

Several fragments fitting together formed the left side of a slab 97.5 cm high, 70 cm wide in its present state, and 3.7 to 4.2 cm thick. The inscription was engraved in the upper left corner of the plaque. The left margin is flush, but the lines, as far as they can be restored, were of different length, three shorter lines followed by a longer one (54 cm in its present state) and ending with a gap of two letters. The height of the characters varies from 2 to 3.5 cm.

L. 2 μνεισθῇ for μνησθῇ, phonetic spelling L. 4 ἀγαπόντων for ἀγαπώντων,

> In this beautiful place may Elias be remembered, and Mary of Bostra, his wife, with all who love them.

For the transition to genitive, see commentary to No. 3. The forms σήμβιος, σήβιος for σύμβιος appear in inscriptions of Jewish and Samaritan

origin, i.e., from a background of Aramaic speakers.[39] It is not Elias' only misspelling: another, the double *sigma* in the ethnic Βοσστρηνή, seems an attempt to render the Samitic pronunciation of the name of the town, בצרה, Boẓra. Both man and wife bear names of Semitic origin, though by that time adopted also by Christians. Elias' avoidance of the usual formula ἐν τῷ ἁγίῳ τόπῳ may be more than a mere chance: it is not inconceivable that he was a Jew and thus did not identify himself with the religious approach then prevailing at the site.

Inscription 39 (Fig. 37)

Fragments of a slab of white marble veined with gray, recovered in Area E.
Unpublished.

Three large fragments fitting together permitted the restoration of part of a long inscription engraved on a slab 62.5 cm high, 4 cm thick and ca. 60 cm wide in its present state. The left part of the text is missing, and the surviving portion of the lines is ca. 45 cm long. The letters, 3.6 cm high, are badly worn.

- - - - - - - - Θ - - -
- - - - ΤΟ . . . ΚΑΙΕΡΜΟ
- - - ΚΩΝCΤΑΝΤΙΝΟC
- - - ΚΑΙΟΥΜΟCΘΩΜΑC
- - - ΗΡΟCΕΠΑΡΧΙΚΟC
- - - ΚΑΙCΕ . ΙΟΥC
- - - ΜΑΤΗ . ΝΑ
- - - ΩΡΓΙ . . . ΦΗΜΙΑ
- - - - - - - - - - ΤΩΝ
- - - - - - - - - - - ΣΙΛΙΑ

[Ἐν τῷ ἁγίῳ τόπῳ μνήσ]θ[ωσιν]
[? Εὐσ]τό[χι(ο)ς] καὶ Ἑρμο-
[γένης ? καὶ] Κωνταντῖνος
[καὶ] Καιοῦμος, Θώμας,
[? Σεου]ῆρος ἐπαρχικός
[- -] καὶ σε[β]ίους
[αὐτῶν ?] Ματή[ρ]να
[καὶ Γε]ωργί[α Εὐ]φημία
[καὶ αἱ ἀδελφαὶ ? αὐ]τῶν
[- - - - - καὶ Βα]σιλία.



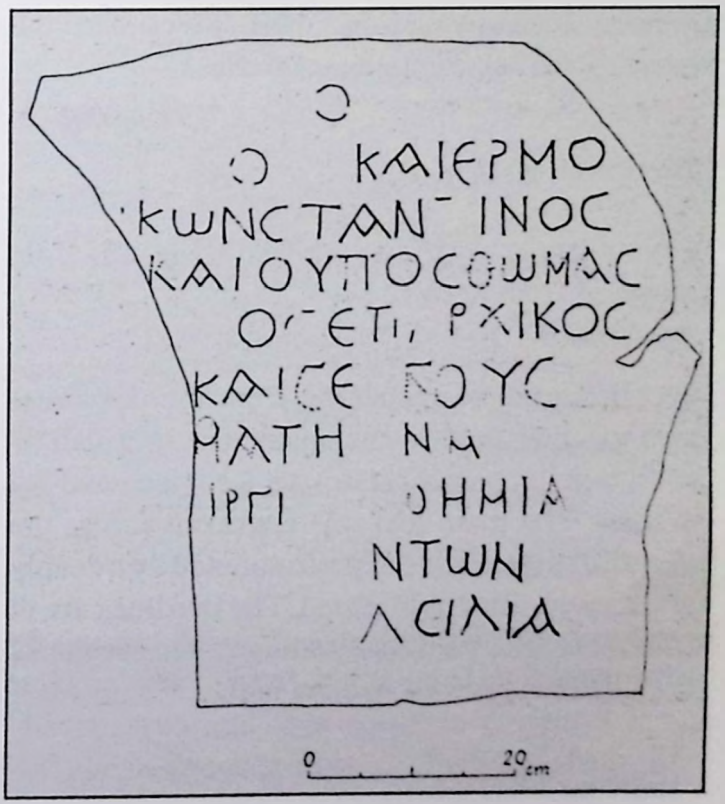


Fig. 37. Inscription 39: photograph and drawing.

L. 2 traces of X or K after TO Ll. 9-10 an alternative reading may be [- - - Ἀν]των[ία - -] L. 10 tip of A visible before ΣΙΛΙΑ

[In this holy place may be remembered Eus]tochius, Ermogenes, Constantine, Kaiumas, Thomas, Severus (?) the *praefectianus*, and [their] wives Materna, Georgia, Euphemia, and [their sisters...?] and Basilia.

In l.6 the vernacular spelling σεβίους stands for συμβίους (cf. No. 38), in the accusative instead of nominative. Not all the men were accompanied by their wives, or chose to mention them, unless more feminine names were contained in l.7 or in l.9, or in both. However, the alternative reading of l.9 suggested above is not very likely, as there would have been ample space to complete the name, especially if one bears in mind that the engravers at Hammat Gader seemingly disliked word breakage at the end of a line. The most likely restoration of l. 9 must contain a term of relationship, followed by αὐτῶν; I prefer αἱ ἀδελφαί, for the restoration τὰ τέκνα or αἱ θυγατέρες αὐτῶν would fail to identify clearly the subjects of the relationship, i.e., the parental couple. The dedicators would thus be a large family of brothers and sisters, some of the brothers accompanied by their wives. On the *praefectiani*, see commentary to No. 17.

Inscription 40 (Fig. 38)

Fragmentary slab of whitish-gray marble, recovered from Area E.
Unpublished.

Several fragments recovered from the pavement fitted together to form the upper part of a slab 77 cm high (in its present state), 95.5 cm long and 3.2 cm thick. The main text was engraved across the full width of the plaque and surmounted by a deeply carved cross, later obliterated. The two lines are of different length, the first 60 cm long, the second 82 cm. The letters are 2.5 to 5 cm high.

+
ΜΝΗCΘωCΙΟΙΦΙΛΟΙ
ΠΑΥΛΟCΚΑΙΜΑΤΡωΝΙΑΝΟC

Μνήσθωσι οἱ φίλοι
Παῦλος καὶ Ματρωνιανός.

May the friends Paul and Matronianus be remembered.

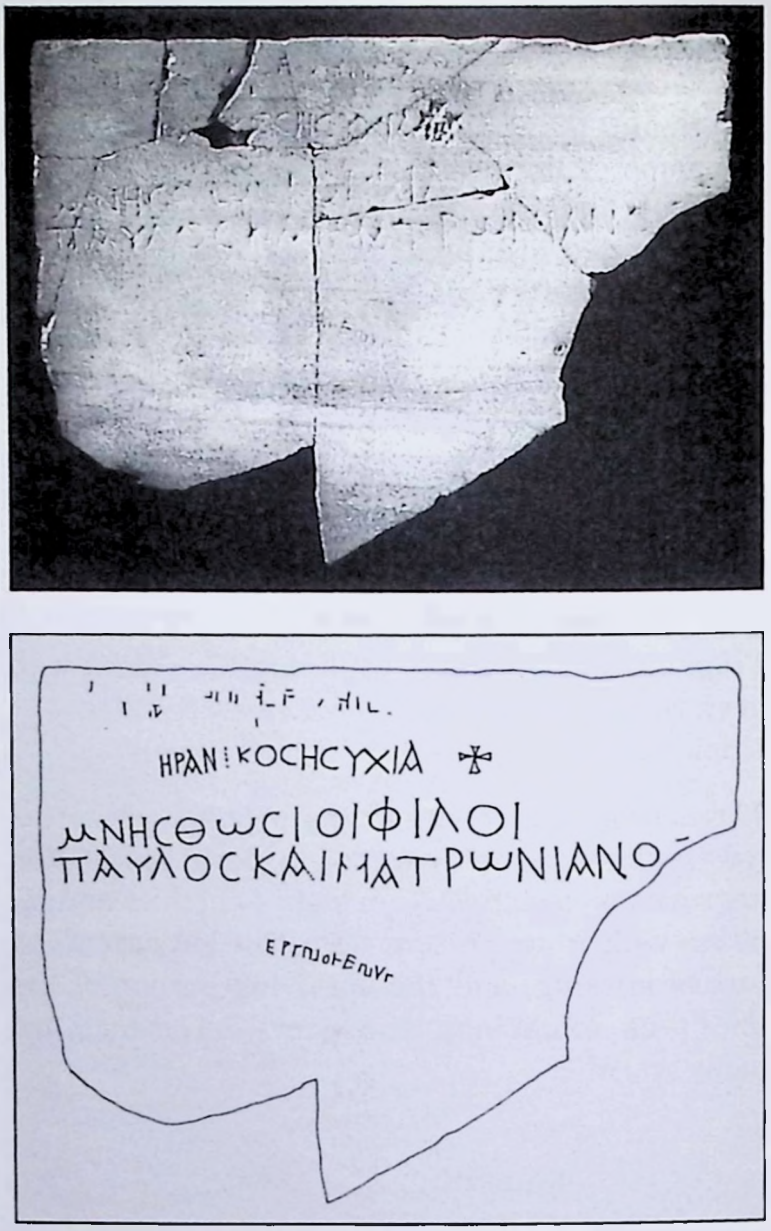


Fig. 38. Inscriptions 40-43: photograph and drawing.

On the left of the cross a second inscription was engraved in one line 45 cm long. The letters are 5 cm high.

ΗΡΑΝ . ΚΟCΗCΥΧΙΑ Ἠρανικὸς ἡσυχία.

Silence (is) pleasant.

Ἠρανικός does not appear in the dictionaries of Liddell and Scott (1968), Lampe (1961) or Sophocles (1914), but can be compared with ἤρα, ἠρανέων, ἐπιήρανος, 'pleasure,' 'pleasant.'

Inscription 41 (Fig. 38)

On the same slab as No. 40.
Unpublished.

Inscription 42 (Fig. 38)

On the same slab as Nos. 40 and 41.
Unpublished.

Along the upper edge of the slab a two-line inscription was incised. The letters are extremely worn and only the first line can be made out.

ΕΝΤΩ. . . ΩΤΟΠΩΜΝΗCΘΗ — Ἐν τῷ [ἁγί]ῳ τόπῳ μνησθῇ

L. 1 [ἱερ]ῷ is equally possible.

In this holy place may [so-and-so] be remembered.

Inscription 43 (Fig. 38)

On the same slab as Nos. 40-42.
Unpublished.

A short line (17 cm) is incised diagonally in the lower part of the slab. The letters are square and 1-2 cm high. An undecipherable mark, probably meant as a ligature, is used twice.

ΕΡΓΠΙΟΛΕΠΙΥΓ

Ἔργ‹ον› Ὀλεπί(ο)υ γ(λύπτου).

Work of Olepius the engraver.

Olepius can be compared with the Semitic name עלף, transcribed in Greek as Ὀλεφος (Wuthnow 1930: 88). On the profession of γλύπτης, see above, No. 25.

Inscription 44 (Fig. 39)

Fragmentary slab of gray marble, recovered from Area E.
Unpublished.

Several fragments fitted together to form part of a slab measuring 72×91 cm in its present state, and 4 cm thick. The inscription is incised partly within, partly without a semielliptical frame, 36 cm high and 45 cm wide, perhaps intended to represent a vessel. Two triangles in the upper part of the 'bowl' may represent handles: directly above each triangle was incised a cross (both were obliterated). The first line of the text is inscribed between the two crosses and is 30 cm long; the other lines follow beneath, and the text is completed by two additions (B and C), on either side of the frame. The letters average 3 cm in height; Y, M and Δ show a tendency to cursive form. Above the frame another line of writing was incised, but it has almost completely disappeared and it is not even certain if it was written in Greek or in some other alphabet.



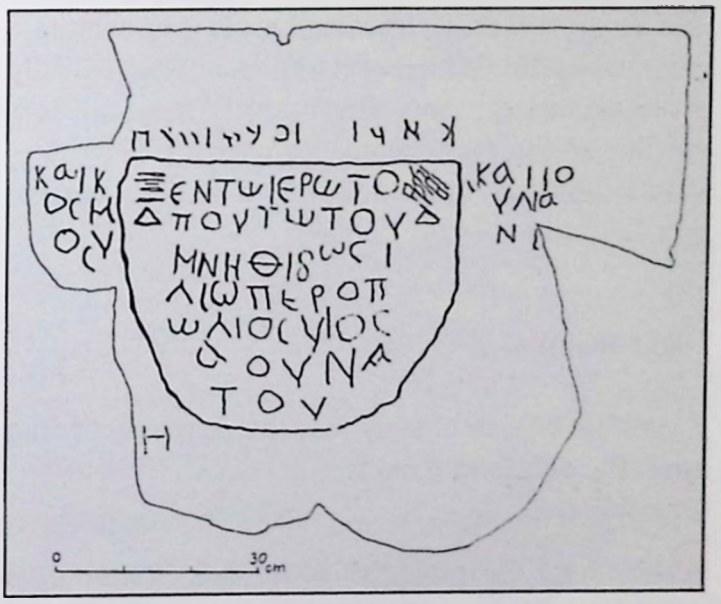


Fig. 39. Inscription 44: photograph and drawing.

A	+ΕΝΤΩΙΕΡΩΤΟ+	Ἐν τῷ ἱερῷ τό-
	ΠΟΥΤΩΤΟΥ	π‹ῳ› τ‹ού›τ‹ῳ›
	ΜΝΗΘΙ8ΩCΙ	μνη(σ)θἰουωσι
4	ΛΙΩΠΕΡΟΠ	Λίω(ν) περ‹ι›π-
	ΩΛΙΟCΥΙΟC	ὠλιος υἱὸς
	ΑΔΥΝΑ	Ἀδυνά-
	ΤΟΥ	του
B 1	ΚΑΙΚ	καὶ Κ-
	ΟCΜ	οσμ-
3	ΟΥ	ου-
	C	ς

C 1 ΚΑΙΙΟ καὶ Ἰο-
ΥΛΙΑ υλια-
3 ΝΗ νή.

A. L. 2 the order of vowels is curiously exchanged L.3 the sign 8 is perhaps a ligature of OY, or else a decoration: in any event, μνήσθωσιν is seriously misspelt Ll. 4-5 ΛΙΨΠΕΡΟΠΩΛΙΟ, in unintelligible: a personal name? or Λ‹έ›ω(ν) περι›πώλιος, as a compound of περί-πωλέω, a *hapax* meaning perhaps 'itinerant trader, pedlar'? or equivalent to περιπολιστικός, 'strolling actor' (Sophocles 1914, s.v.), from περιπολίζειν, 'to travel about'?

In this sacred place may be remembered Leo the pedlar(?), son of Adynatos, and Cosmous and Juliana.

Ἀδύνατος, 'feeble,' 'disabled,' is not known as a personal name, but it might be a nickname – hardly a complimentary one; alternatively it might be a variant of the Palmirene Ὀδαινατος, Ὀδεναθος ('DNT: Stark 1971: 2). Κοσμοῦς is either a variant or a feminine form of Κόσμας.

Inscription 45 (Fig. 40)

Fragment of slab of gray veined marble recovered from the debris in Area E.
Unpublished.

A fragment forming the lower left corner of a plaque, in its present state measuring 67×54 cm, and 5.4 cm thick, contains a single word set in two line. The first line is 28 cm long, while the second is shorter. The letters are 2-5 cm high.

ΜΟΝΟΦΩ Μονόφω-
2 ΝΟC νος.

Single-toned.

It is said of deaf-mutes, who have but one tone of voice.

Inscription 46 (Fig. 41)

Slab of white marble from Area C, in front of the entrance.
Unpublished.

The shattered slab, 93.1 cm high, 40.4 cm wide and



Fig. 40. Inscription 45: photograph and drawing.



Fig. 41. Inscription 46: photograph and drawing.

2 cm thick, was found to the north of the columned portal. The inscription is engraved in seven lines set breadthwise and having a maximum length of 35 cm. The letters are 3-4 cm high and are round; some of them show a tendency to cursive forms, but it is not easy to establish their precise contours in view of the broken state of the stone.

ΜΝΗCΘΗ
ΠΑΥΛΟC
ΕΝΤΩΑΓΙ
ΩΤΟΠΩ
ΚΕΠΙΦΑΝΙ
CΑΔΕΛΦΑΥ
ΤΟΥ

Μνησθῇ
Παῦλος
ἐν τῷ ἁγί-
ῳ τόπῳ
κ(αὶ) Ἐπιφάνι-
(ο)ς ἀδελφ(ὸς) αὐ-
τοῦ.

L. 6 It is not clear whether the abbreviation ΑΔΕΛΦ(ός) is marked or not

May Paul be remembered in this holy place, and Epiphanius his brother.

Inscription 47 (Fig. 42)

On a flagstone in the pavement of Area C, in front of the columned portal.
Unpublished.



Fig. 42. Inscription 47: photograph and drawing.

The inscription is enclosed within a *tabula ansata* roughly incised on the stone; its right side is missing. The letters are 1.5-2 cm high. The only letters preserved are ΔΑΜΑ - -, probably a name, e.g. Δάμασος, Δαμάσκιος, Δάμας or the like.

Inscription 48 (Fig. 43)

On a flagstone in the pavement of Area C, north of the columned portal (L 302).
Unpublished.

The inscription is of unprofessional quality, roughly incised on a flagstone. The first line is ca. 34 cm long; the second is short, but seemingly complete. There is a gap between KM and O, but the stone is smooth and shows no traces of letters.

KM OKYPAKOCOC
AMI

Κ(ύριε) μ(νήσθητι) ὁ Κύρακος ὁ C-
αμι



Fig. 43. Inscription 48: photograph and drawing.

Lord, remember Cyriac, also (called) Sami.

Κύρακος, Κύρικος are variants of Κυριακός. Σάμι appears to be a variant of the Semitic name Shammay, שמי, that is transcribed in Greek as Σαμεει, Σαμαιη, Σαμεος, Σαμας, Σεμεος (Wuthnow 1930: 104; Di Segni 1990: 266; Di Segni 1993: 233). The man bore two names, one Greek, one Semitic, like the sons of Marcus in No. 2. The grammatical construction is faulty, in a manner not uncommon in private inscriptions of the sixth and seventh centuries.

Inscription 49 (Figs. 44-45)

Slab of white-gray marble discovered in *situ*, in the pavement of the Hall of Fountains (Area D), in front of the entrance of a passage leading to the Oval Hall (Area A). Now in the Israel Museum, Jerusalem.

Date: the poem was probably composed on the occasion of Eudocia's visit to Hammat Gader, either in 438-9 or between 443 and 455. Its display in the pavement may have occurred later, probably in concomitance with the works in 455.

Green and Tsafrir 1982: 77-91, Pl.9; *SEG* 32, no. 1502; Meimaris 1983: 388-398; Robert and Robert 1984: 512, no. 505.[40]

The inscription is set in two columns of eight lines each. One more line on top, with different lettering, indicates the authorship of the composition. The height of the slab is 71 cm and its thickness ca. 2 cm. Its right edge is broken, and the maximum length of the slab in its present state is 181 cm, but the halfway mark fixing the start of the right-hand register shows that the original length was 184-186 cm, i.e., six Byzantine feet.

The average height of the letters is ca. 5 cm. They were carefully cut with a sharp chisel and belong to the oval alphabet. Shallow horizontal lines marked the upper limits of the characters, and a vertical line, ca. 2 cm to the left of the halfway mark, indicated the limit of the left column. Punctuation marks and apostrophe are also used, as well as two abbreviation marks: a small *stigma* and a horizontal stroke.

+ ΕΥΔΟΚΙΑC ΑΥΓΟΥCΤΗC +
ΠΟΛΛΑΜΕΝΕΝΒΙΩΤΩΚ͵ΑΠΙΡΟΝΑΘΑΥΜΑΤΟΠΩΠΑ
ΤΙCΔΕΚΕΝΕΞΕΡΕΟΙΠΟCΑΔΕCΤΟΜΑΤ᾽ΩΚΛΙΒΑΝ᾽ΕCΘΛΕ
CONMENOCOYTIΔANOCΓΕΓΑΩCΒΡΟΤΟC·ΑΛΛΑCΕΜΑΛΛΟ͞
ΩΚΕΑΝΟΝΠΥΡΟΕΝΤΑΝΕΟΝΘΕΜΙCΕCΤΙΚΑΛΕΙCΘΑΙ
ΠΑΙΑΝΑΚΑΙΓΕΝΕΤΗΝΓΛΥΚΕΡΩΝΔΟΤΗΡΑΡΕΕΘΡΩΝ
ΕΚCΕΟΤΙΚΤΕΤΑΙΟΙΔΜΑΤΟΜΥΡΙΟΝΑΛΛΥΔΙCΑΛΛΗ
ΟΠΠΗΜΕΝΖΕΙΟΝΠΗΔ᾽ΑΥΚΡΥΕΡΟΝΤΕΜΕCΟΝΤΕ
ΤΕΤΡΑΔΑCΕCΠΙCΥΡΑCΚΡΗΝΩΝΠΡΟΧΕΕΙCCΕΟΚΑΛΛΟC
ΙΝΔΗ·ΜΑΤΡΩΝΑΤΕ·ΡΕΠΕΝΤΙΝΟC·ΗΛΙΑCΑΓΝΟC·
ΑΝΤΩΝΙΝΟCΕΥC·ΔΡΟCΕΡΑΓΑΛΑΤΙΑ·ΚΑΙΑΥΤΗ
ΥΓΕΙΑ·ΚΑΙΧΛΙΑΡΑΜΕΓΑΛΑ·ΧΛΙΑΡΑΔΕΤΑΜΙΚΡΑ·
ΜΑΡΓΑΡΙΤΗC·ΚΛΙΒΑΝΟCΠΑΛΕΟC·ΙΝΔΗΤΕ·ΚΑΙΑΛΛΗ
ΜΑΤΡΩΝΑ·ΒΡΙΑΡΗΤΕΜΟΝΑCΤΡΙΑ·ΚΗΠΑΤΡΙΑΡΧΟΥ
ΩΔΕΙΝΟΥCΙΤΕΟΝΜΕΝΟCΟΒΡΙΜΟΝΗΝΕ .....
ΑΛΛΑΘΕΟΝΚΛΥΤΟΜΗΤΙΝΑΕΙCΟΜ .....
ΕΙCΕΥΕΡΓΕCΕΙΗΝΜΕΡΟΠΩΝΤΕΧΡ .....

+ Εὐδοκίας Αὐγούστης +
Πολλὰ μὲν ἐν βιωτῷ κ(αὶ) ἀπίρονα θαύματ᾽ ὄπωπα,
τίς δὲ κεν ἐξερέοι, πόσα δὲ στόματ᾽, ὦ κλίβαν᾽ ἐσθλέ,
σὸν μένος, οὐτιδανὸς γεγαὼς βροτός; Ἀλλά σε μᾶλλο(ν)
ὠκεανὸν πυρόεντα νέον θέμις ἐσθὶ καλεῖσθαι,
Παιάνα καὶ γενέτην γλυκερῶν δοτῆρα ῥεέθρων.
Ἐκ σέο τίκτεται οἶδμα τὸ μύριον, ἄλλυδις ἄλλη.
ὄππῃ μὲν θεῖον, πῇ δ᾽ αὖ κρυερόν τε μέσον τε.
Τετράδας ἐς πίσυρας κρηνῶν προχέεις σέο κάλλος.
Ἰνδή· Ματρώνα τε· Ῥεπέντινος· Ἠλίας ἁγνός·
Ἀντωνῖνος εὖς· δροσερὰ Γαλατία· καὶ αὐτὴ
Ὑγεία· καὶ χλιαρὰ μεγάλα· χλιαρὰ δὲ τὰ μικρά·
Μαργαρίτης· κλίβανος παλεός· Ἰνδή τε· καὶ ἄλλη
Ματρώνα· Βριαρή τε, μονάστρια· κ᾽ ἡ πατριάρχου.
Ὠδείνουσι τεὸν μένος ὄβριμον ἠνε[κὲς αἰέν.]
ἀλλὰ θεὸν κλυτόμητιν ἀείσομ[αι ˘ – – ˘ ˣ]
εἰς εὐεργεσείην μερόπων τε χρ[˘ – – ˘ ˣ]

L. 6 L.Koenen apud Green-Tsafrir, 85 n. 26 γλυκερόν ‹τε› L. 16 Meimaris ἀείσομ[αι ὄφρα σε σώζῃ] L. 17 Green-Tsafrir [˘ – – – ˘]; Meimaris χρ[ῆσιν ἀείνων +]

By Eudocia Augusta
I In my life many and infinite wonders I have seen,
But who, however many his mouths, could proclaim, O noble *clibanus*,
4 Your strength, having been born a worthless mortal? But rather
It is just that you be called a new fiery ocean,
Paean and life source, provider of sweet streams.
From you is born the infinite swell, here one, there another,
8 On this side boiling, but there in turn cold and tepid.
You pour forth your beauty into four tetrads of springs.
II Indian and Matrona, Repentinus, Elijah the Holy,
Antoninus the Good, dewy Galatea and
12 Hygeia herself, the large lukewarm pool and the small lukewarm pool,
The Pearl, the old *clibanus*, Indian, and also another
Matrona, Briara and the Nun, and the (spring) of the Patriarch.
For those in pain your mighty strength [is ever constant].

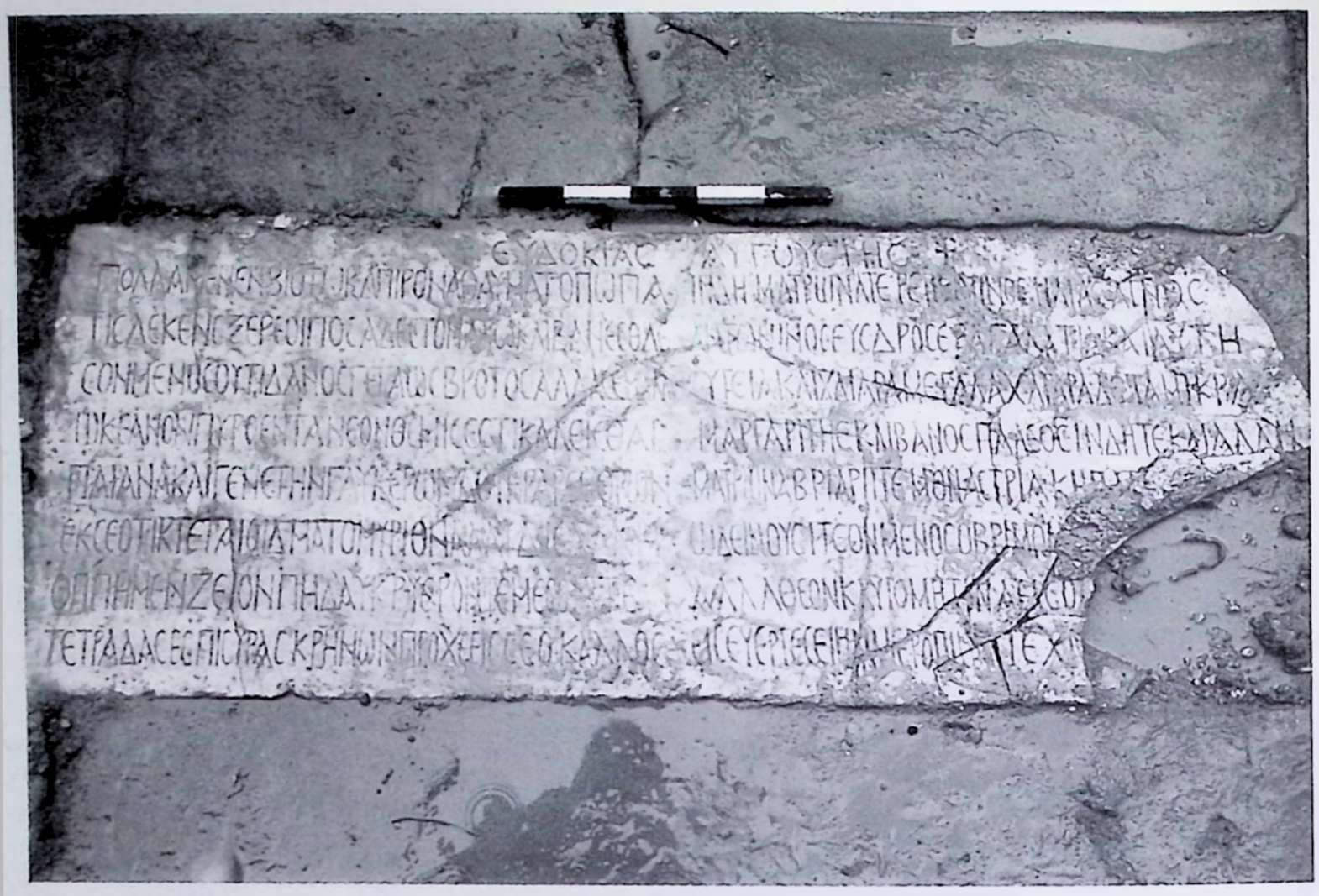
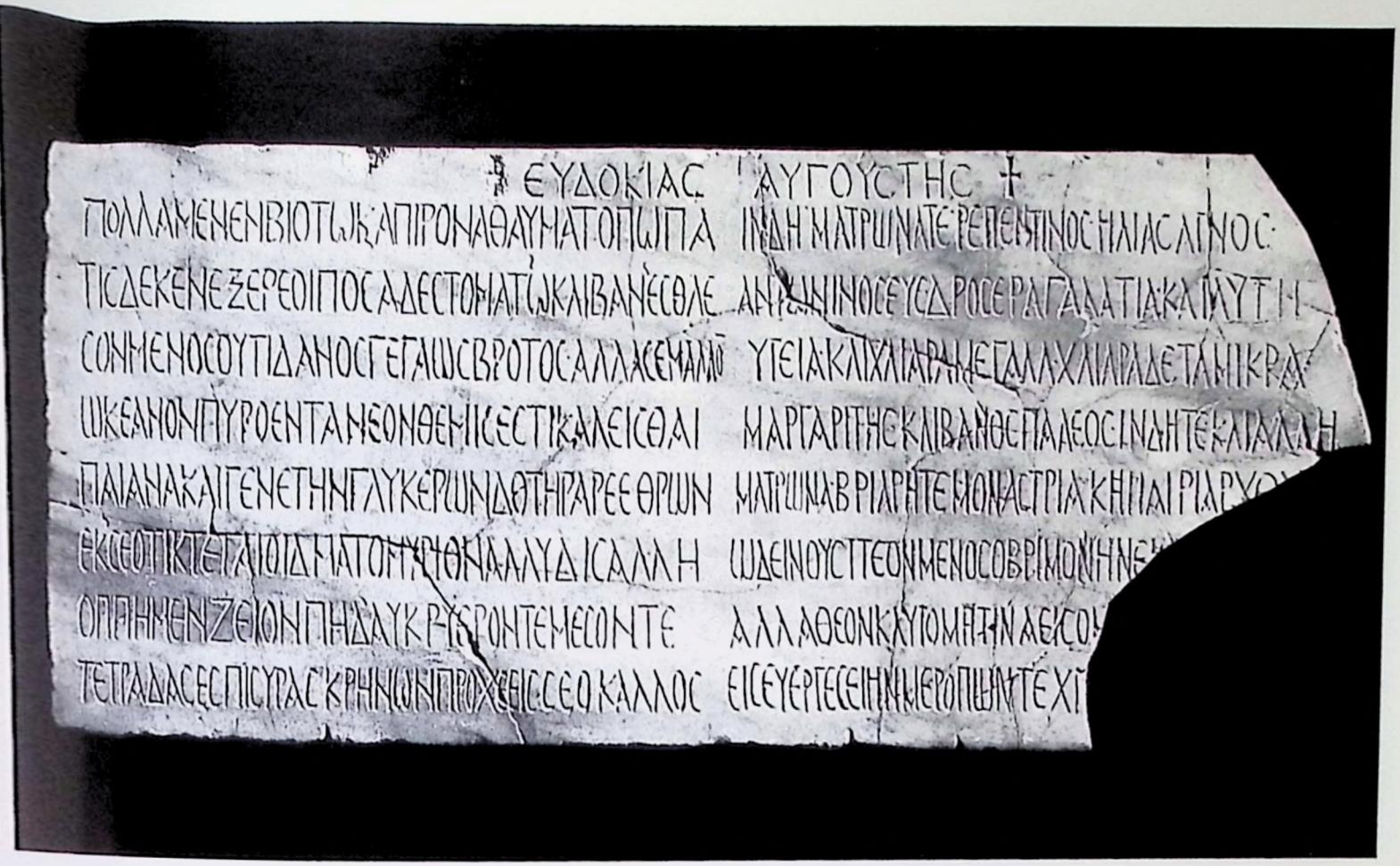


Fig. 44. Inscription 49 in situ.

16 But I will sing of God, famous for wisdom,
[that he may save you],
For the benefit of men and [everlasting usefulness].

Empress Eudocia was well known as a poetess in the classical style.[41] This poem is conceived in Homeric style in the first part, as an *ekphrasis* in the second. Baths and fountains were a popular subject in Byzantine epigrams.[42] Several phonetic spellings can be noted, which often result in difficulties in the meter. The *clibanus*, the source of the hot stream, is called Paean, the physician of the gods, because of the healing powers of its waters, and is likened to an ocean, symbol of plenitude, as is noted by the editors – but also, and more prosaically, a term already used for a counduit leading water to a bathhouse (Welles 1938: 479, no. 278 = *SEG* 7, no. 873; cf. *Historia Augusta*. XVIII. Aelius Lampadius: Alexander Severus 25, 5, vol. I: 269). The 'four tetrads of springs' probably do not refer to fountains installed in the baths complex, such as those found standing on the edge of the pool in the Hall of Fountains. The 'four tetrads' correspond in number to the 16 names mentioned in ll. 10-14, that probably refer to individual parts of the baths or elements of the water system. Some of them may have been ornamented with emblematic representations, perhaps protomes or statues, that illustrated their names: females in exotic garb ('Indian women'), figures of ladies, portraits of the prophet Elijah, of the emperor Antoninus Pius, of a personage called Repentinus, perhaps a patron of the baths, or the personification of a spring;[43] personifications of the sea-nymph Galatea and of the goddess of health, Hygeia, a mythological figure referred to as Briara, 'the Strong,'[44] a nun: all these can be easily imagined in human form.[45] The Patriarch's pool might owe its name to a biblical figure, or to a



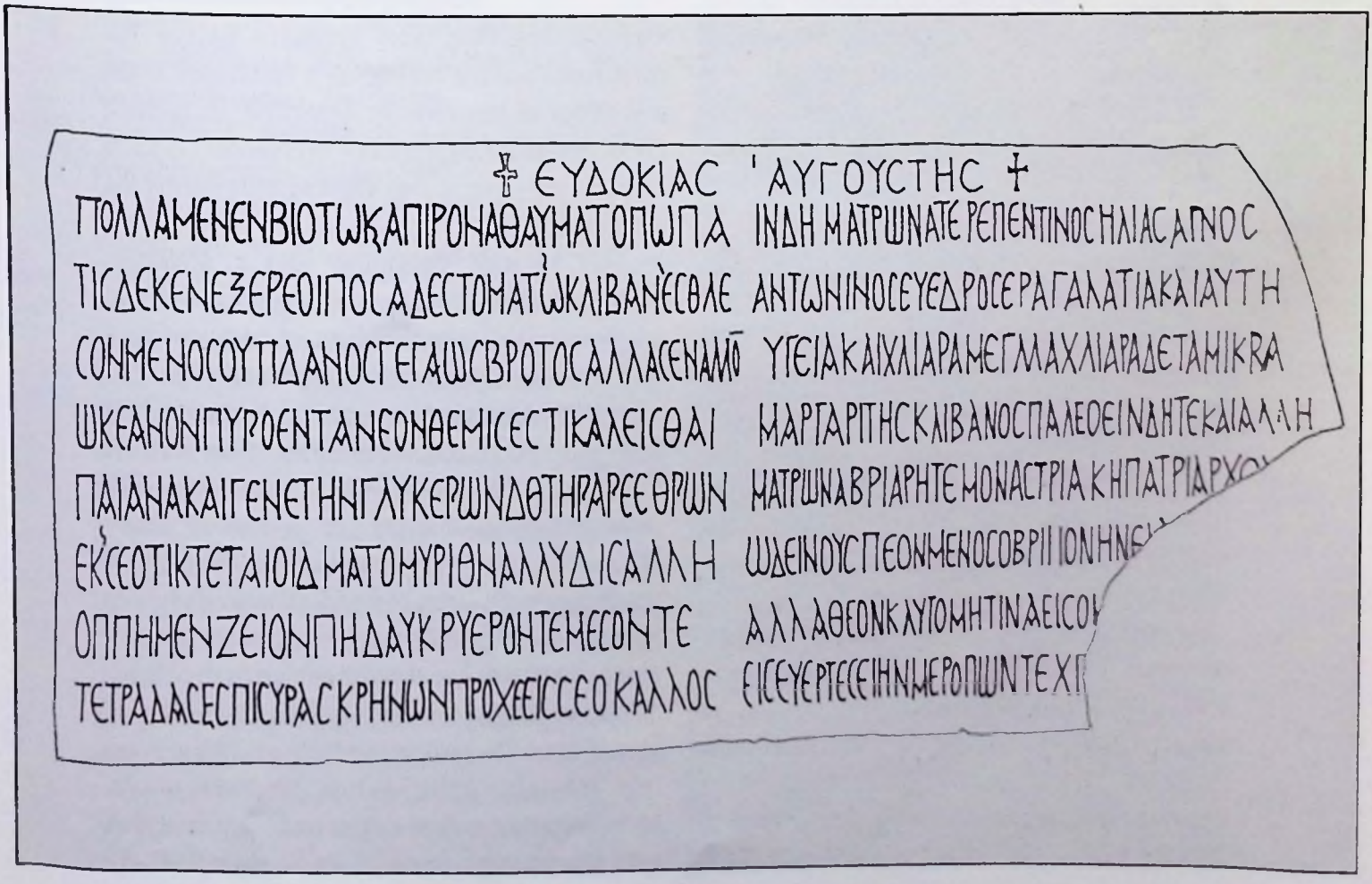


Fig. 45. Inscription 49: photograph and drawing.

tradition of Jewish patriarchs visiting the baths.[46] The other elements are named according to their function and characteristics; and the 'Pearl' – something that cannot be easily personified – must be an allusion to a pool. The description seems to follow a logical order. The great pool in Area D is identified as χλιαρά by Nos. 52-53, and it must be the μεγάλα χλιαρά of the inscription. The first editors translated the term in the classical sense of 'warm (waters),' *scil.* 'warm baths.' However, in Byzantine texts χλιαρότης means 'lukewarmness' (Lampe 1961, s.v.), and indeed it appears that the water in this pool came not from the hottest source, but from a cooler one, possibly the spring whose water temperature is 28°C (Hirschfeld 1989). The mention of the μεγάλα χλιαρά is preceded by seven names, all of figures. It should be mentioned that Area D had seven alcoves with bathtubs; the eighth rectangular alcove functioned as a passageway into Area A, and the two central semicircular alcoves contained no tubs. Then follow three designations of pools, possibly those in Areas E, C and B; then again four names descriptive of figures, followed by 'the (spring) of the Patriarch,' another pool: perhaps the oval pool in Area A with its four water-spouting alcoves.

The poem was obviously composed by the empress on the occasion of her visit to the baths, perhaps to be cured of some sickness. Her *ekphrasis* describes the site as she saw it, with its natural resources splendidly set off by the architecture and ornamentation of the building. Eudocia's description seems to apply to the appearance of the baths complex prior to the changes carried out ca. 455, the nature of which can be established from a combination of the archaeological data and the contents of No. 1. At that time the three pools in Areas C, E and B were sealed and a new one was created, probably in Area G (see below).

As there is no reason to doubt the attribution of this poem to Eudocia, the date of its composition may be fixed either at the time of her first visit in Palestine in 438-9, or during the years of her exile, between 443 and her death in 460. In this period the Augusta was separated from her husband, Theodosius II, and settled in the Holy City. Eudocia was involved in building projects in many parts of the country, which she visited just before her death (Cyr. Scyth., *Vita Euthymii* 35: 53-54). The editors identify the 'patriarch' mentioned in l.14 with Juvenal, who is commonly supposed to have been promoted to patriarchal rank after the Council of Chacedon in 451. Since he was reinstated in his see only in 453, after the expulsion of the anti-Chalcedonian usurper, the monk Theodosius, Green and Tsafrir proposed dating the inscription after 453 or better still, after Eudocia's reconciliation with the Catholic Church, represented in Jerusalem by Juvenal, in 456. It is by no means certain, however, that Juvenal was recognized as patriarch by that date.[47] On the other hand, there is no convincing reason why a contemporary patriarch should intrude among the emblematic figures that lent their names to the fountains. Neither is there any hint in the text that the baths complex of Hammat Gader was one of the building projects sponsored by Eudocia, a circumstance which might have led to the naming of one of the bath elements after her newly recognized spiritual shepherd. On the contrary, she seems to have viewed the place at the peak of its classical splendor, and probably before the catastrophe and the rebuilding it underwent in the mid-fifties of the century. Meimaris' suggestion (1983: 394) that Eudocia came to Hammat Gader to cure her left knee, which she had hurt during the inauguration of St. Stephen's church in Jerusalem on May 15, 439 (Gerontius, *Vita s. Melaniae junioris* 59: 244), would put the empress's visit in this year; or else, she may have come at any time between 443 and the date of the catastrophe.

Another argument against a late date for Eudocia's visit and the composition of her poem, is that from early 455 the Augusta was busy with personal troubles that put her in a mood wholly adverse to such literary amusements. The plight of her daughter Eudoxia and of Eudoxia's family in Rome grieved her and awoke in her heart spiritual doubts that led to her seeking advice from Symeon the Stylite and from Euthymius. Far from enjoying herself at health resorts, Eudocia spent the years from 455 to her death visiting the desert monks, keeping the company of clerics and busying herself with charity (Cyr. Scyth., *Vita Euthymii* 30, 35: 47-49, 51-52).

But does the empress's visit date the engraving of the inscription? Eudocia was a well-known figure and a celebrated poetess: thus, even years after her death the caretakers of the baths might have taken pride in displaying an epigram of hers that praised the place in such enthusiastic terms. Therefore it is by no means impossible that a poem composed by Eudocia following a visit to the hot springs, was engraved on the pavement at some later time, when the paving was renewed. Both the location of the marble slab and its length – exactly six feet – plainly show that the slab was not casually laid among the flagstones of an existing pavement; on the contrary, the setting was planned and carried out in the course of far-reaching restoration works, as is also indicated by a pipe which passes underneath the slab and parallel to it. These operations may have been part of the renovation project referred to in No. 1, and indeed the scripts in the two texts show a strong resemblance.

Inscription 50 (Fig. 46)

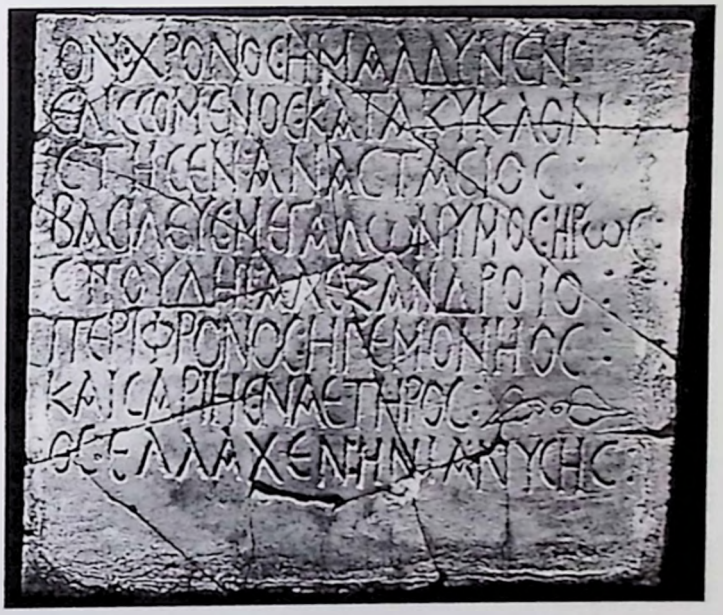
Slab of grayish-white marble, originally set high up in the eastern wall of the Hall of Fountains. Now at the Israel Museum, Jerusalem.
Date: during the reign of Anastasius (491-518), probably between 505 and 508.
Di Segni and Hirschfeld 1986:250-268, Pl.34; Feissel 1989: 505, no. 999; Di Segni 1992:314.

The inscription is engraved on a slab 69.3 cm high, 79 cm long and 2.6 cm thick, that was discovered lying face down under the debris of the hall's eastern wall, 6 m from its foundation (Fig. 46). Clearly it had been set high up, above the opening of the second alcove from the south, at a height of at least six meters. Traces of the original mortar can still be seen along the edges. The text is divided into eight lines with an average length of 72 cm; the height of the letters ranges from 4.5 to 6 cm. The characters were carefully cut with a sharp instrument and belong to the oval script. Two dots separate each word from the next.

The text consists of four hexameters; each line represents half a verse and ends with the caesura or the end of the verse. The seventh line, which is particularly short for metrical reasons, was brought to full length by the addition of two ivy leaves.

ΟΝ·ΧΡΟΝΟCΗΜΑΛΔΥΝΕΝ·
ΕΛΙCCΟΜΕΝΟC·ΚΑΤΑΚΥΚΛΟΝ·
CΤΗCΕΝ·ΑΝΑCΤΑCΙΟC·
ΒΑCΙΛΕΥC·ΜΕΓΑΛΩΝΥΜΟC·ΗΡΩC·
CΠΟΥΔΗΙ·ΑΛΕΞΑΝΔΡΟΙΟ·
ΠΕΡΙΦΡΟΝΟC·ΗΓΕΜΟΝΗΟC·
ΚΑΙCΑΡΙΗC·ΝΑΕΤΗΡΟC· (*haederae*)
ΟC·ΕΛΛΑΧΕΝ·ΗΝΙΑ·ΝΥCΗC·

Ὃν χρόνος ἠμάλδυνεν | ἑλισσόμενος κατὰ κύκλον
στῆσεν Ἀναστάσιος, | βασιλεὺς μεγαλώνυμος ἥρως,
σπουδῇ Ἀλεξάνδροιο, | περίφρονος ἡγεμονῆος,
Καισαρίης ναετῆρος, | ὃς ἔλλαχεν ἥνια Νύσης.



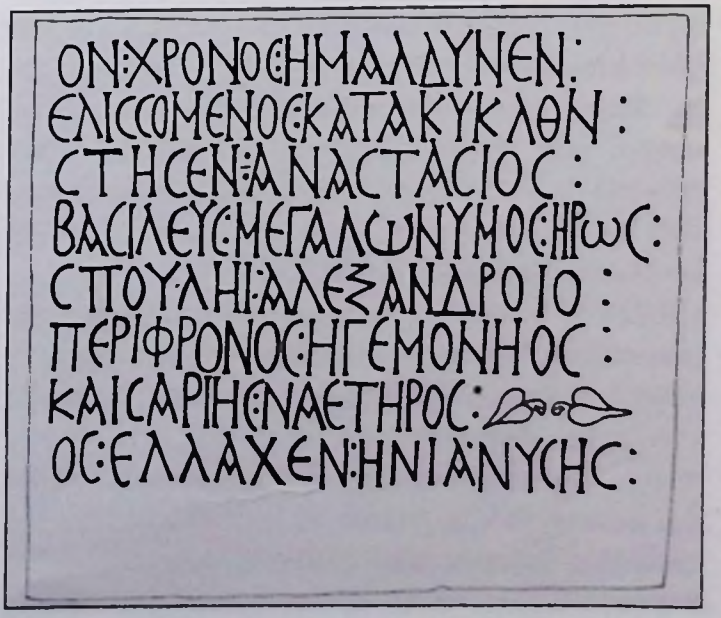


Fig. 46. Inscription 50: photograph and drawing.

L. 5 *iota adscriptum* L. 6 ἡγεμονῆος epic genitive for ἡγεμονέως

(This place) which Time crushed, revolving in its cycle,
raised Anastasius, king-hero with a great name,
under the care of Alexander, the thoughtful governor,
dweller of Caesarea, who obtained the reins of Nysa.

The grammar, vocabulary and style of this composition are Homeric. The *iota adscriptum* in l. 5 is an additional device to stress the affected archaism of the text. Because of this affectation, titles are expressed in anomalous, anachronistic terms. Thus the expression βασιλεὺς ἥρως must be taken as an epic mannerism equivalent to the common Byzantine formula θεῖος βασιλεύς;[48] ἡγεμονεύς stands for ἡγεμών, *praeses*, the official title of the provincial governor, although in this period and region the term more commonly used was ἄρχων. The attribute περίφρων is Homeric, but it is also revealing of the governor's caring attitude to the health of his subjects, recalling, by the association of the word, the scene of Euryclea lovingly washing Odysseus' feet and soothing his sores (*Odyss.* XIX, 439-60).

This and the next two inscriptions, also mentioning the governor Mucius Alexander, belong to an unknown year of the long reign of Anastasius (491-518); but perhaps their date can be pinpointed to the years 505-508, on the basis of three arguments (extensively discussed by Di Segni and Hirschfeld 1986: 265-267). First, most of the building projects financed by Anastasius fall in the second half of his reign.[49] Second, in the years 502-505 the Persian war was ravaging Palestine, as well as all the Orient, a circumstance that could justify the prolonged neglect of the baths, which is alluded to in the first verse; and third, in 505 the famous monk Sabas settled as a hermit in this very stretch of the Yarmuk's banks: apparently he found the area deserted, or at least sufficiently unfrequented to satisfy his requirements. About the end of 505 he began 'to be disturbed by the crowding laymen, and departed stealthily' (Cyr. Scyth., *Vita Sabae* 33-34: 118-120). Since visitors did not normally trouble Sabas, it is not unlikely that the crowd that so disgusted him was not composed of admirers flocking to see the holy man, but of masons and craftsmen sent to restore the baths, followed by a throng of sick and tourists coming to enjoy the waters, with their usual accompaniment of entertainers and pedlars. If our hypothesis is true, the restoration work began in 505, possibly in connection with Urbicius' visit to Palestine: the former *praepositus sacri cubiculi* was entrusted with large sums of money, which he disbursed for the immediate relief of the country (Joshua the Stylite, *Chronicle* 84-85: 66-67, 69; Theodosius, *De situ terrae sanctae* 28: 123). Mucius Alexander may have been the governor in charge in 505/6 or a little later, when the work was completed.

Inscription 51 (Fig. 47)

Slab of gray marble, originally set in the rear wall of the central semicircular alcove in the eastern wall of the Hall of Fountains. Now at the Israel Museum, Jerusalem.
Dated as No. 50.
Di Segni and Hirschfeld 1986: 258-260; Feissel 1989: 505, no. 999; Di Segni 1992:314.

The inscription was discovered under the debris of the eastern wall, directly in front of the semicircular alcove and 4.5 m away from the foundation of the wall, thus leading the excavators to the conclusion that the plaque was originally set inside the apse of the alcove. The inscription was carefully engraved on a slab 51.8 cm high, 69 cm long and 1.8-2.3 cm thick. The edges are thicker than the center and still show traces of mortar. The six lines are 64 cm long and the letters average 5.5 cm in height. The script closely resembles that of No. 50, including the interword dots and the decorative ivy leaf. This text too is written in hexameters, three in number, each taking up two lines: the division follows the meter.

ΜΟΥΚΙΟC·ΑΛΕΞΑΝΔΡΟC·(haedera)
ΠΑΝΥΠΕΙΡΟΧΟC·ΗΓΕΜΟΝΗΩΝ·
ΘΕCΚΕΛΟΝ·ΗΝΥCΕΝ·ΕΡΓΟΝ·
ΟΝ·ΕΤΡΕΦΕ·ΚΑΙCΑΡΟC·ΑCΤΥ·
ΔΕΞΑΜΕΝΟC·ΜΕΓΑ·ΔΩΡΟΝ·
ΑΝΑCΤΑCΙΟΥ·ΒΑCΙΛΗΟC·

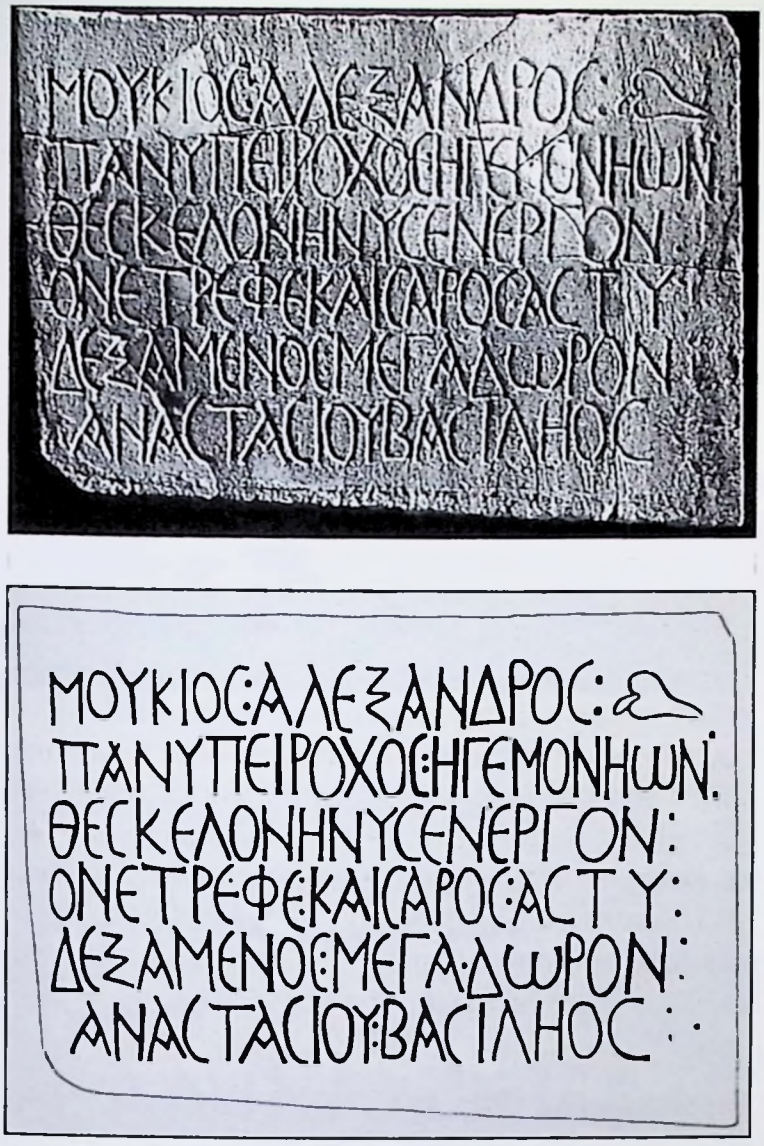


Fig. 47. Inscription 51: photograph and drawing.

Μούκιος Ἀλέξανδρος | πανυπείροχος ἡγεμονήων
4 θέσκελον ἤνυσεν ἔργον, | ὃν ἔτρεφεν Καίσαρος ἄστυ,
δεξάμενος μέγα δῶρον | Ἀναστασίου βασιλῆος.

L. 1 Μούκιος is read as a disyllable – ˘ L. 2 ἡγεμονήων pseudo-epic form for ἡγεμονεύων? Feissel suggests gen. pl. of ἡγεμονεύς, after an adjective used as superlative: but this should be ἡγεμονέων L. 6 βασιλῆος epic genitive for βασιλέως

Mucius Alexander, supreme governor (or: the greatest of governors),
accomplished this wondrous work, (he) whom the city of Caesar nourished,
having received a great gift from Emperor Anastasius.

The 'great gift' could be the governorship itself or a special money grant from Anastasius in order to finance the restoration of the baths. On more than one occasion did this emperor display interest in the quality of life of his subjects by building public baths (Malalas, *Chron.*: 409; Joshua the Stylite, *Chronicle* 29, 87: 20, 69; Zacharias Rhetor, *Chronicle*, VII, 6: 26).

Inscription 52 (Fig. 48)

Slab of limestone originally set in the western wall of the Hall of Fountains, immediately above the opening of the passage leading into the Oval Hall (Area A). Now at the Israel Museum, Jerusalem, Dated as No. 50.
Green and Tsafrir 1982: 91-93; *SEG* 32, no. 1503; Di Segni and Hirschfeld, 1986: 260-262; Di Segni 1992:314.

The inscription was carefully engraved with a sharp tool on the back of a slab originally forming part of a screen, which was cut off and reused. In its present state it measures 71×108 cm and is 3-4 cm thick. The slab was found in the passageway between Areas A and D, broken into several pieces, and lying in the debris of the western wall of the Hall of Fountains. Like Nos. 50-51, it was originally embedded in the wall, actually facing No. 50, though probably not so high up, judging from the spot where it fell when the wall collapsed. Also, its characters are larger, 8-10 cm high, which made the reading even easier. The script is not very dissimilar from that of Nos. 50-51, but lacks the separation dots and the ivy leaves. On the other hand, this inscription opens with a cross.

The text consists of two iambic trimeters divided into four lines: the division follows the meter.

+ΟΚΑΙCΑΡΕΥCΤΟΝΟΙΚΟΝ
ΑΛΕΞΑΝΔΡΟCΠΟΕΙ
3 ΟΤΗΝΧΛΙΑΡΩΝΕΠΩΝΥΜΟΝ
ΘΟΛΟΝ ΚΑΜΩΝ.

Ὁ Καισαρεὺς τὸν οἶκον | Ἀλέξανδρος ποεῖ,
3 ὁ τὴν χλιαρῶν ἐπώνυμον | θόλον καμών.

L. 2 ποεῖ ˘ ˉ for ποιεῖ, as dictated by meter

Alexander of Caesarea is the maker of the building,
he who built the *tholos* of the lukewarm pool that is named after him.

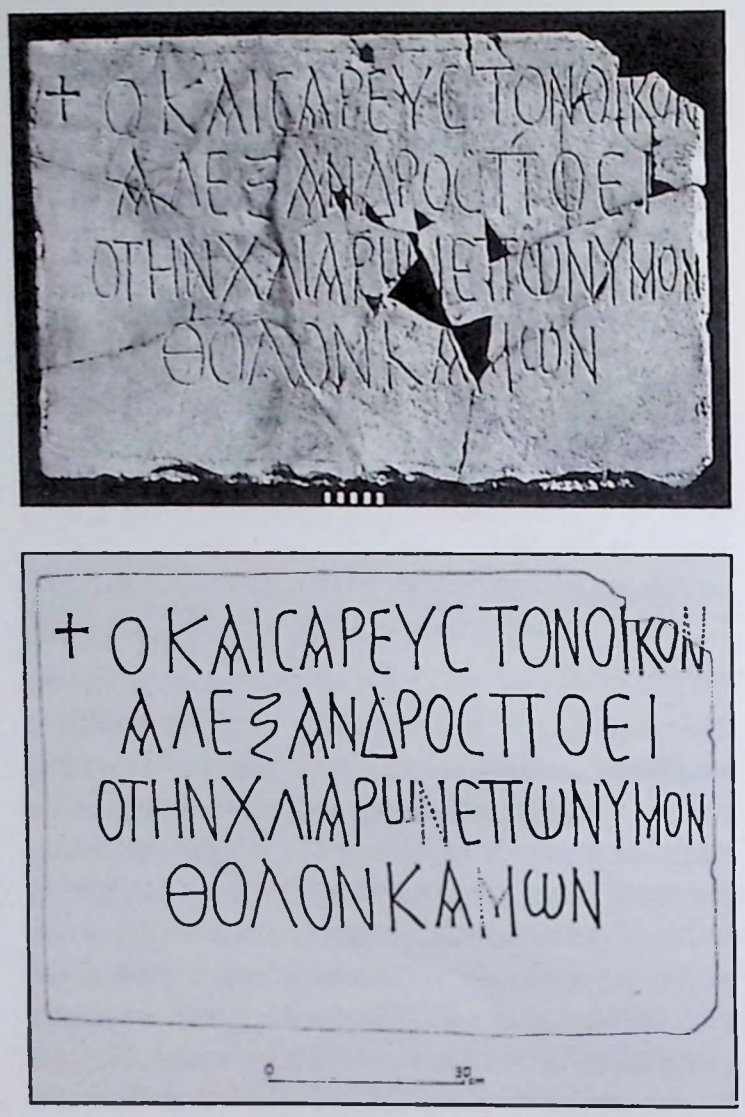


Fig. 48. Inscription 52: photograph, drawing and back side of slab.

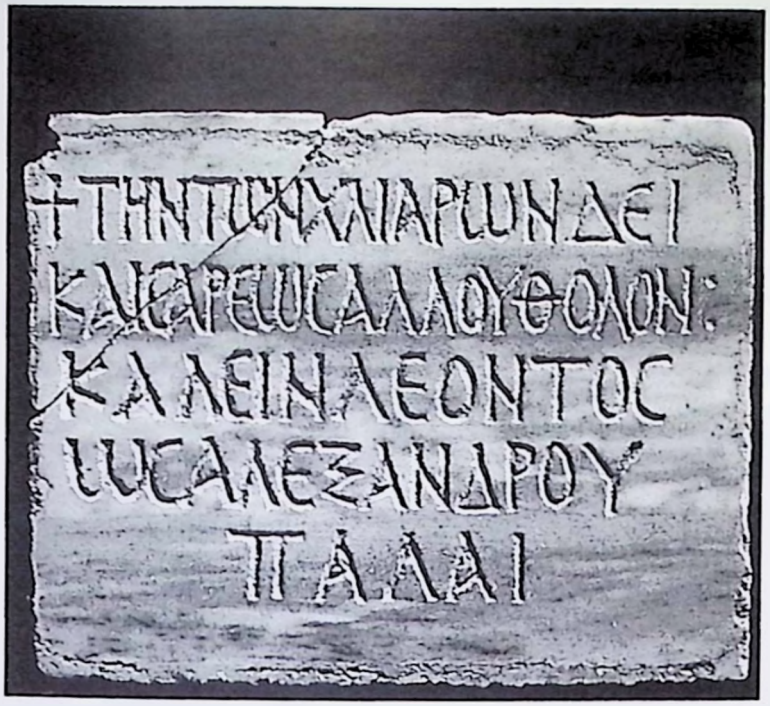
The dedicator is the same Mucius Alexander of Caesarea who is mentioned in Nos. 50-51 in his official capacity. In this case, however, the general appearance of the inscription, its tone and the choice of meter, all show that this text was of a more private character. It adds several data to our knowledge. First, not only had Alexander built or rather restored the hall, and possibly other parts of the baths complex, in compliance with the emperor's wish, but he had also attached his own name to a part of the building, the '*tholos* of the lukewarm pool.' The *tholos* can be identified with the semicircular alcove just a few meters from the spot where the fallen pieces of the inscription were found: a later inscription referring to 'the *tholos* named after Alexander of Caesarea' was discovered next to said alcove, on the other side (see below, No. 53). This also confirms the inference from No. 49, that various elements of the baths were designated by individual names.

Another piece of information can be extracted from this text. If the '*tholos* of the lukewarm pool' refers to the nearby alcove, the great pool which occupies most of the hall must have held lukewarm water and the Hall of Fountains would thus have served as a *tepidarium*. It was the χλιαρὰ μεγάλα of Eudocia. The temperature of the springs was such that there was no need to heat the water, as in a regular bathhouse: thus it was quite feasible to fill the largest pool with tepid water.

Inscription 53 (Fig. 49)

Slab of limestone originally set in the western wall of the Hall of Fountains, immediately to the north of the semicircular alcove (*tholos*).
Di Segni and Hirschfeld 1986: 262-263; Di Segni 1992:315.

The inscription is cut on a plaque of white-gray marble 51.8 cm high, 61 cm long and 3-4 cm thick. The slab was discovered leaning on the wall, one meter from the northern corner of the semicircular alcove. It was obviously dislodged by the first shock of the earthquake that destroyed the baths. Remains of mortar are still visible on the edges. The inscription consists of five lines of varying length, the first four averaging 54 cm, while the fifth is short and set in the center of the plaque. The letters have an average height of 5.5 cm. The text begins with a cross and forms an epigram of two iambic trimeters; two dots separate the first from the second verse.



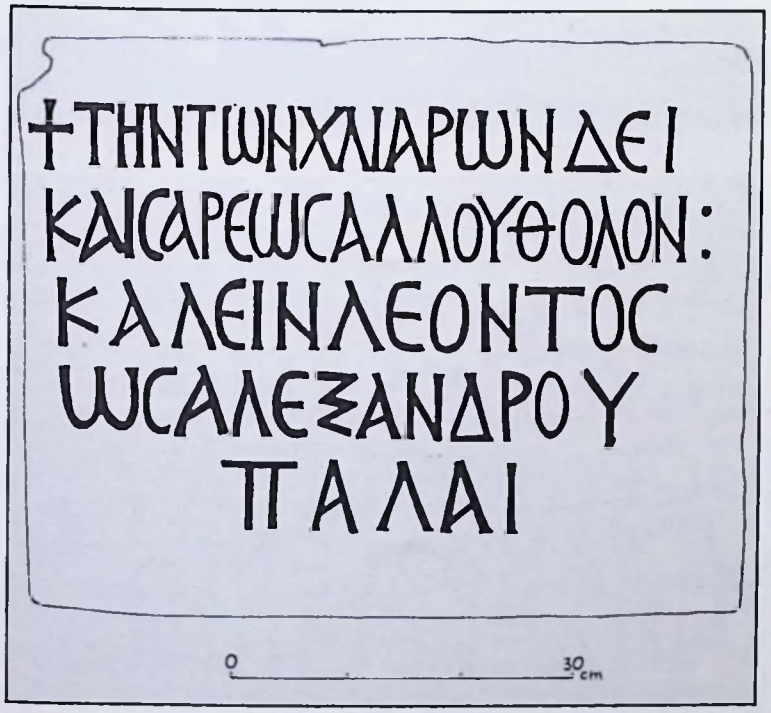


Fig. 49. Inscription 53: photograph and drawing.

+ΤΗΝΤΩΝΧΛΙΑΡΩΝΔΕΙ
ΚΑΙCΑΡΕΩCΑΛΛΟΥΘΟΛΟΝ:
ΚΑΛΕΙΝΛΕΟΝΤΟC
4 ΩCΑΛΕΞΑΝΔΡΟΥ
ΠΑΛΑΙ

Τὴν τῶν χλιαρῶν δεῖ / Καισαρέως ἄλλου θόλον
καλεῖν Λέοντος, / ὡς Ἀλεξάνδρου πάλιν.

The *tholos* of the lukewarm pool should be named after another Caesarean,
Leo, as it once (used to be named) after Alexander.

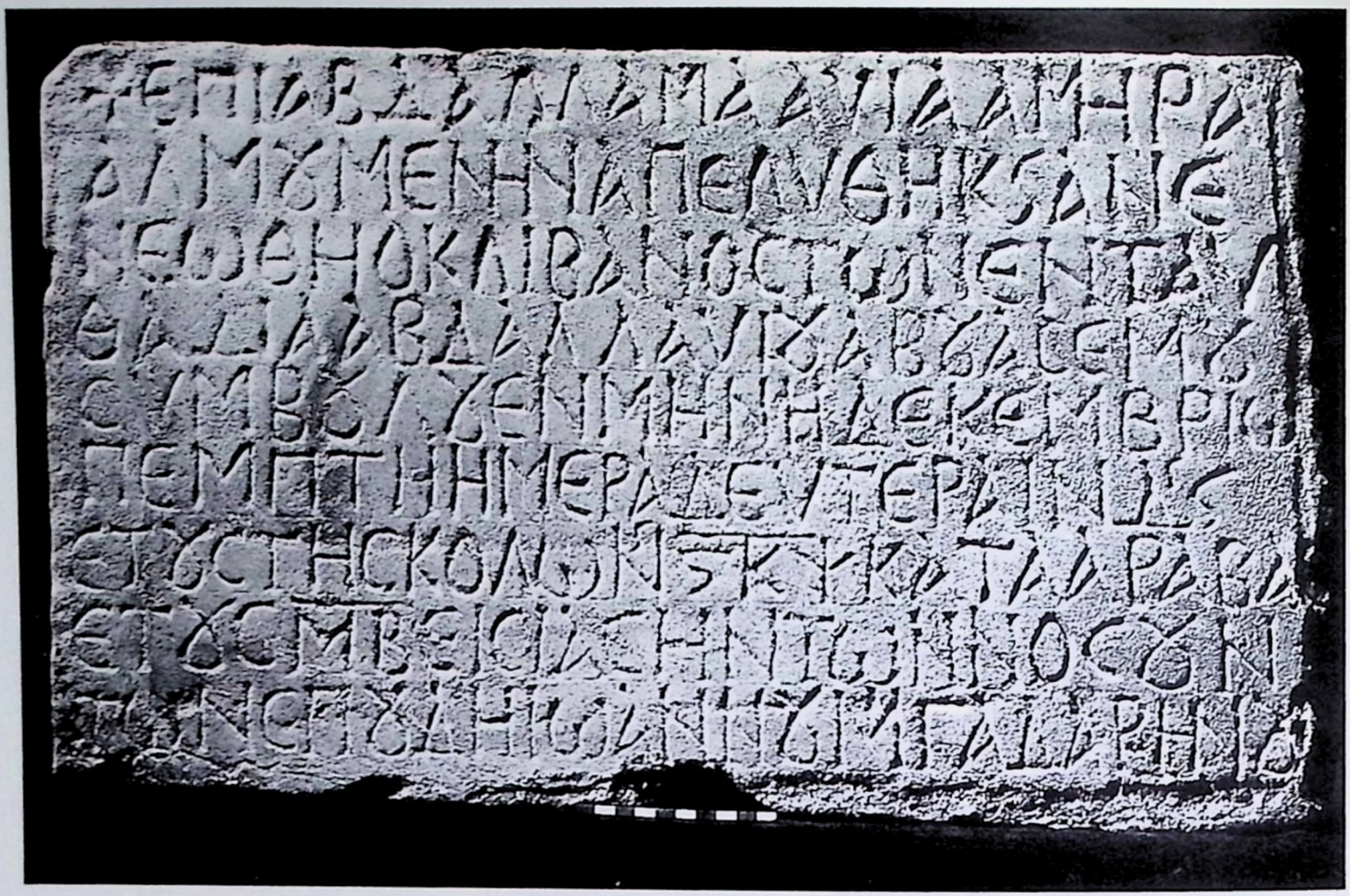
Leo, probably having seen to some repairs of the *tholos*, half-jokingly states that the structure should now bear his name. He did not simply tear down the inscription of the former patron, but responded to it with one of his own in the same meter, if not quite so skilfully used as in Alexander's epigram.

This Leo must have been a person of rank to have permitted himself such a jaunty attitude toward the governor: probably he was of equal rank and a governor himself. The time gap between them was not a brief one, as we can infer from the expression πάλαι. Perhaps Leo can be identified with the κόμης καὶ ἄρχων of No. 37: however, as we remarked there, several governors of *Palaestina Secunda* called Leo are known.

Inscription 54 (Fig. 50)

Gray marble slab set in the wall of the semicircular alcove in the western wall of the Hall of Fountains. Now at the Israel Museum, Jerusalem.
Date: December 5, 662.
Hirschfeld and Solar 1980: 71; id. 1981: 202-204; *SEG* 30, no. 1687; Green and Tsafrir 1982: 94-96; *SEG* 32, no. 1501; Di Segni and Hirschfeld 1986: 265-266, n. 63; Di Segni 1992: 315-317.

The inscription was discovered *in situ*, embedded in the wall of the central alcove in the western wall (L 419) of the Hall of Fountains, 2.1 m above the floor. The text has nine lines, carefully engraved in a dense but clear script. Shallow horizontal incisions mark the upper limit of each line. The slab measures 44×75 cm and is ca. 3 cm thick. The average height of the letters is about 3 cm. The text begins with a cross. The *stigma* is used as abbreviation mark, both large and small. A tiny vertical stroke above the letter M in the last line is not an abbreviation mark but an overwritten I. Several ligatures appear in the script, including the sign ϐ for the diphthong OY. The numerals are marked with a long horizontal stroke.



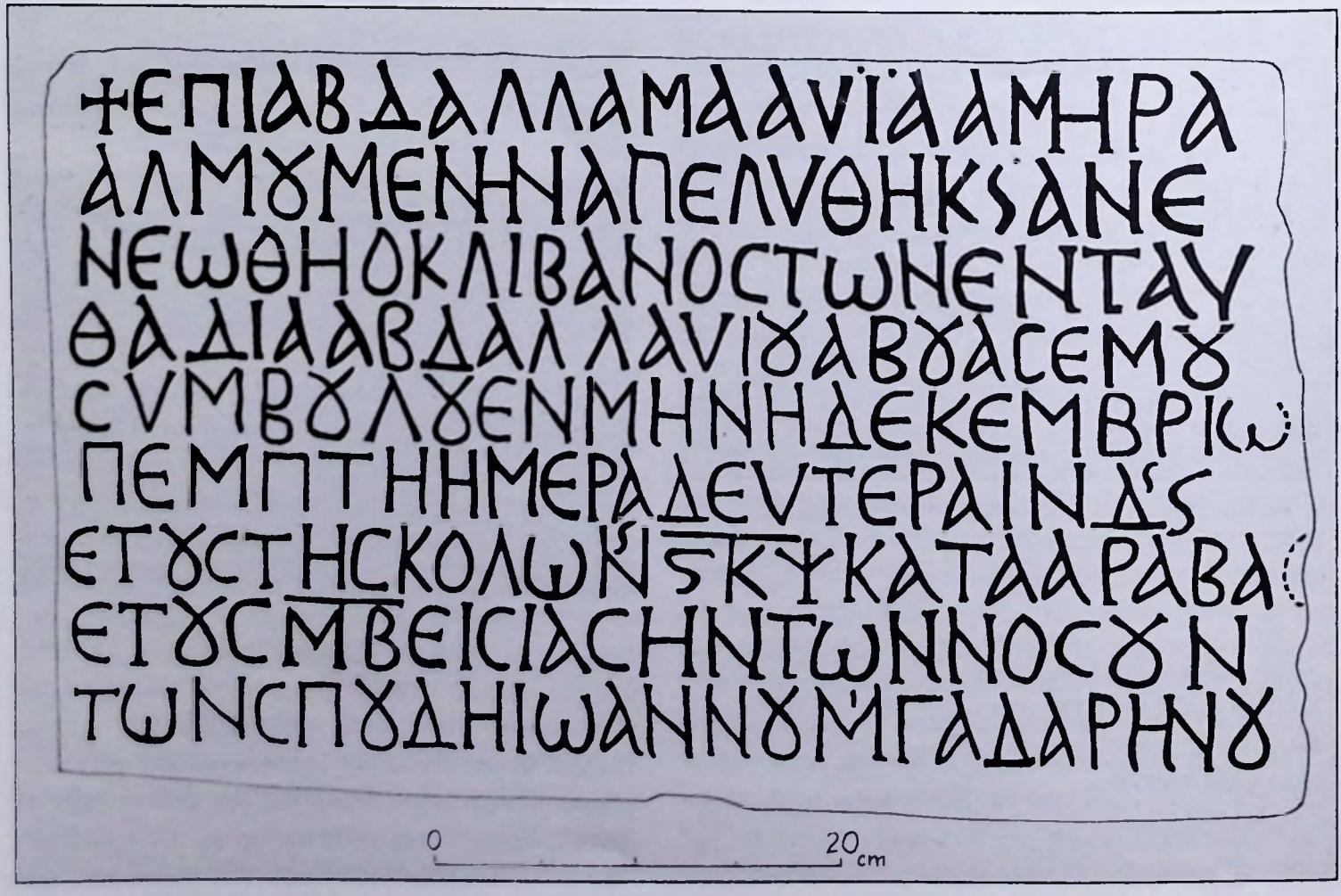


Fig. 50. Inscription 54: photograph and drawing.

+ΕΠΙΑΒΔΑΛΛΑΜΑΑΥΙΑΑΜΗΡΑ
ΑΛΜϬΜΕΝΗΝΑΠΕΛΥΘΗΚSΑΝΕ
ΝΕѠΘΗΟΚΛΙΒΑΝΟCΤѠΝΕΝΤΑΥ
ΘΑΔΙΑΑΒΔΑΛΛΑΥΙϬΑΒϬΑCΕΜϬ
CΥΜΒϬΛϬΕΝΜΗΝΗΔΕΚΕΜΒΡΙѠ
ΠΕΜΠΤΗΗΜΕΡΑΔΕΥΤΕΡΑΙΝΔˢS
ΕΤϬCΤΗCΚΟΛѠΝˢS̄K̄Ψ̄ΚΑΤΑΑΡΑΒΑ
ΕΤϬCM̄B̄ΕΙCΙΑCΗΝΤѠΝΝΟCϬΝ
ΤѠΝCΠϬΔΗΙѠΑΝΝϬΜΓΑΔΑΡΗΝϬ

+ Ἐπὶ Ἀβδάλλα Μαάυια ἀμήρα
ἀλμουμενὴν ἀπελ‹ο›ύθη κ(αὶ) ἀνε-
νεώθη ὁ κλίβανος τῶν ἐνταῦ-
θα διὰ Ἀβδάλλα υἱοῦ Ἀβουασέμου
συμβούλου, ἐν μηνὶ Δεκεμβρίῳ
πέμπτῃ, ἡμέρᾳ δευτέρᾳ, ἰνδ(ικτιῶνος) ς΄,
ἔτους τῆς κολων(ίας) ϛκψ, κατὰ Ἀράβα(ς)
ἔτους μβ΄, εἰς ἴασην τῶν νοσούν-
των, σπουδῇ Ἰωάννου μ(ειζοτέρου) Γαδαρηνοῦ.

L. 2 all eds. ἀπελύθη; Di Segni (1992) ἀπελ‹ο›ύθη L. 5 MHNH phonetic spelling for μηνί L. 8 IACHN phonetic spelling for ἴασιν L. 9 Hirschfeld and Solar (1980) μ(ητροπολίτου), id. (1981) μ(αγιστριανοῦ); Bingen 1984: 369-370 μ(ειζοτέρου)

> In the days of Abdallah Mu'awiya, the commander of the faithful, the *clibanus* of the (baths) here was cleared and renewed by Abdallah son of Abu Hashim (or Abu 'Asim), the governor, in the month of December, on the fifth day, Monday, in the 6th (year) of the indiction, in the year 726 of the colony, according to the Arabs the 42nd year, for the healing of the sick, under the care of John the Gadarene, the steward.

The date is given by means of a threefold indication: the year of the city era,[50] the indiction, and the year of Hegira. The year 42 A.H. began on April 25, 662, and the sixth indiction began on September 1, 662. December 5, 662 indeed was a Monday. The era of Gadara fell in autumn 64 B.C.E.: the new year of the city calendar, therefore, fell between the beginning of September and December 5. The use of the Hegira beside the local era testifies to the official character of this inscription. On the other hand, it is the only mark of Islamization: the official in actual charge of the work was evidently a Christian and he had the sign of the cross engraved at the beginning of the text.

The day chosen for the inauguration may also provide a hint about the predominant faith at this time and place: December 5 was St. Sabas' memorial day, probably a meaningful date for the locals, since a Sabaite monastery, founded in 502 by the holy man himself, was still flourishing in the neighborhood at least until the second half of the sixth century (Cyr. Scyth., *Vita Sabae* 34: 119-120), and there is no reason why it may not have been still in existence in the Early Arab period.

Three personages are mentioned in connection with the work. The caliph Mu'awiya bears two Arab titles in Greek transcription: 'Abd Allah, 'servant of God' – which is not part of his personal name but an epithet of the early caliphs – and Amir al-Mu'minin 'commander of the faithful,' a synonym of caliph (Hasson 1982: 100; see also Blau 1982: and on Mu'awiya, see Lammens 1906-1908; Pinto 1938). The second official is called a συμβουλος, or 'counsellor'; in Greek texts and documents of the Early Arab period this title pertains to the governor of a *jund* (province). In this case, Abdallah Abu Hashim (or 'Asim) would be the governor of al-Urdunn, corresponding to *Palaestina Secunda* (Hasson 1982: 100-101). However, in seventh-century papyri from Nessana (*PNessana* 58,10; 72,1; 73,1; 75,3; 158,3) the title σύμβουλος is given to the governor of the district (*kura*), who resided in the county seat, Gaza. Accordingly, Abdallah may have been no more than a district chief.

The third personage, who actually supervised the work, was a local man from Gadara. Unfortunately, the title of his office is not spelled out, but only indicated by the abbreviation MI (M with an overhanging I). Μειζότερος, proposed by Bingen (see above, critical apparatus), seems preferable to μητροπολίτης (extremely unlikely) or μαγιστριανός, which is unrelated to the abbreviation MI; moreover, the μαγιστριανός or *agens in rebus*, though he could indeed be in charge of a town on behalf of the governor (see above, No. 26), did not belong to the local administration but to the imperial bureaucracy; therefore, as a Byzantine officer, he had no place in the Muslim administration. Μειζότερος or μείζων, 'elder,' could be a majordomo or a village elder (alderman). In the Byzantine period the title referred to a local office that also survived into the

Early Arab period. Most examples come from Egyptian papyri from the third, fourth, and especially from the fifth-seventh centuries, which show the μειζότεροι or μείζονες as belonging to the κοινόν of the πρωτοκωμῆται and subordinate to the pagarch (Preisigke and Kiessling 1931: 133-134). In a sixth-century example from Asia Minor (Hanton 1927-1929: 106-107), a μειζότερος, apparently a lay steward on behalf of the hegumen, is in charge of the peasants of a monastic estate. A Palestinian μειζότερος is known from an inscription in the fourth-century mosaic pavement of the synagogue at Hammat Tiberias (Dothan 1983: 54-60; Roth-Gerson 1987: 65, no. 16).[51] Since the conditions of the settlement at Hammat Gader at the time of the inscription are not known, it is impossible to ascertain whether John the Gadarene was a representative of the local community, i.e., a village alderman, or a steward sent out by the district administration to care for the baths or for the suburb itself; but the latter seems more likely.

In the editors' reading and interpretation, ἀπελύθη ὁ κλίβανος τῶν ἐνταῦθα is translated: 'the hot baths of (the people) there were saved' – the meaning of which is unclear. The reading ἀπελύθη should probably be emended to ἀπελούθη: not so much a mistake as a phonetic spelling. Τῶν ἐνταῦθα is better understood as referring to the thermae. As to the term κλίβανος, the translation 'hot baths' is too vague: notwithstanding the example in No. 6, the meaning of the word can hardly be generalized to indicate the whole structure of the thermae, since both Eudocia and the Latin-speaking sixth-century pilgrim pseudo-Antoninus (*Itinerarium* 7: 132) used the term for a specific element of the baths, an installation from which issued flows of hot water. Therefore, ὁ κλίβανος τῶν ἐνταῦθα that was 'cleaned and renewed' must be taken to mean the hot-water system that fed the baths, i.e., the spring's source (elevating pool) together with the conduits which conveyed the hot water to the pools. The use of the term κλίβανος for an underground channel is not unprecedented (cf. *SB*, no. 7188). The periodical cleaning of these conduits was essential, since without proper care the mineral salts would clog them and render the baths unusable.

It has been observed that λούειν τὸ βαλανεῖον does not mean 'to clean the bath,' but 'to make it function' (Meyer 1981; cf. Robert and Robert 1982: 333, no. 116). This, however, does not apply in this case: even if one could argue that the verb ἀπο-λούειν might mean 'to put (the bath) back into operation again,' and κλίβανος might perhaps be taken in the general sense of 'bath,' the order of the words makes this solution very unlikely, as the *clibanus* – whatever it was – cannot very well have been 'put back into working order' first, and then 'renovated.' It seems better, therefore, to stick to the literal meaning of ἀπολούειν, 'to wash off', 'to clear.'

In front of the semicircular alcove, two Arabic graffiti are incised in the stones of the pavement (see Chapter 4, no. 1).

Inscription 55 (Fig. 51)

Slab of gray marble embedded in the eastern wall of the pool, beneath one of the fountains.
Unpublished.

The inscription is engraved on the whole surface of a slab measuring 47×40 cm and 3.5 cm thick, embedded in the wall of the pool in front to the second alcove from the north (L 433). The length of the lines varies from 35 to 39 cm. The letters belong to the round alphabet and are 3-4.5 cm high. The quality of the engraving is remarkably good. No abbreviation signs are used.

ΕΝΤΩΚΑΛΩ	Ἐν τῷ καλῷ
ΤΟΠΩΜΝΗCΘΗ	τόπῳ μνησθῇ
ΙΕΡΙCΜΕΤΑΤΗC	Ἱέρι(ο)ς μετὰ τῆς
4 CΥΜΒΙΟΥΚΑΙΤΕΚ	συμβίου καὶ τέκ-
ΝΩΝΚΑΙΟΥΛΙ	νων κα(ὶ) Ἰουλι-
ΑΝΟCΚΑΙΕΥΤΟ	νὸς καὶ Εὐτο-
ΚΙΑCΥΜΒΙΟC	κία σύμβιος.

L. 5 haplography

> In this beautiful place may Hierius be remembered, with (his) wife and children, and Julian and (his) wife Eutocia.

The name Ἱέριος is known in Byzantine inscriptions from Shaqqa (Maximianopolis) and Orman in Hauran (Dunand 1932: 402, no. 10; 1933:



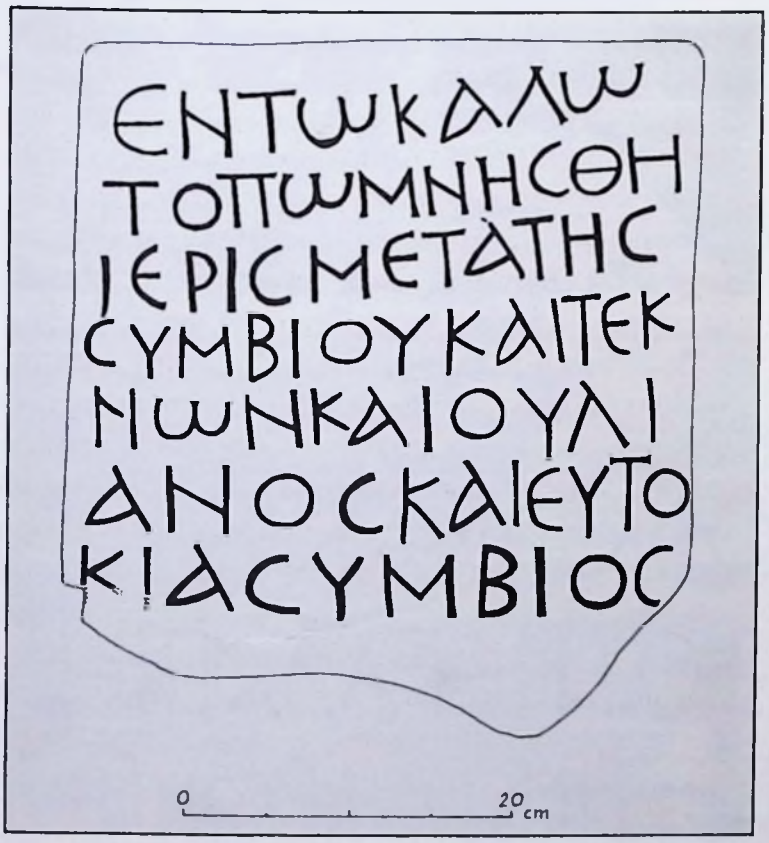


Fig. 51. Inscription 55: photograph and drawing.

243, no. 183) and from Rehovot in the Negev (Tsafrir 1988: 155, no. 2). Εὐτοκία is rare: Εὐτόκιος occurs in a Christian inscription from Kh. Munya near Gerasa (*SEG* 33, no. 1305) and in Egypt (Preisigke 1922: 114; Foraboschi 1971: 116; *SEG* 31, no. 1494).

Inscription 56 (Fig. 52)

On the southernmost fountain on the eastern side of the pool.
Unpublished.

A single line, 35 cm long, forming the beginning of the usual formula, is engraved on one of the fountains. The letters are square, 2.5-3 cm high.

ΕΝΤΩΑΓΙΩΤΟΠΩ Ἐν τῷ ἁγίῳ τόπῳ

In this holy place ...



Fig. 52. Inscription 56: photograph.

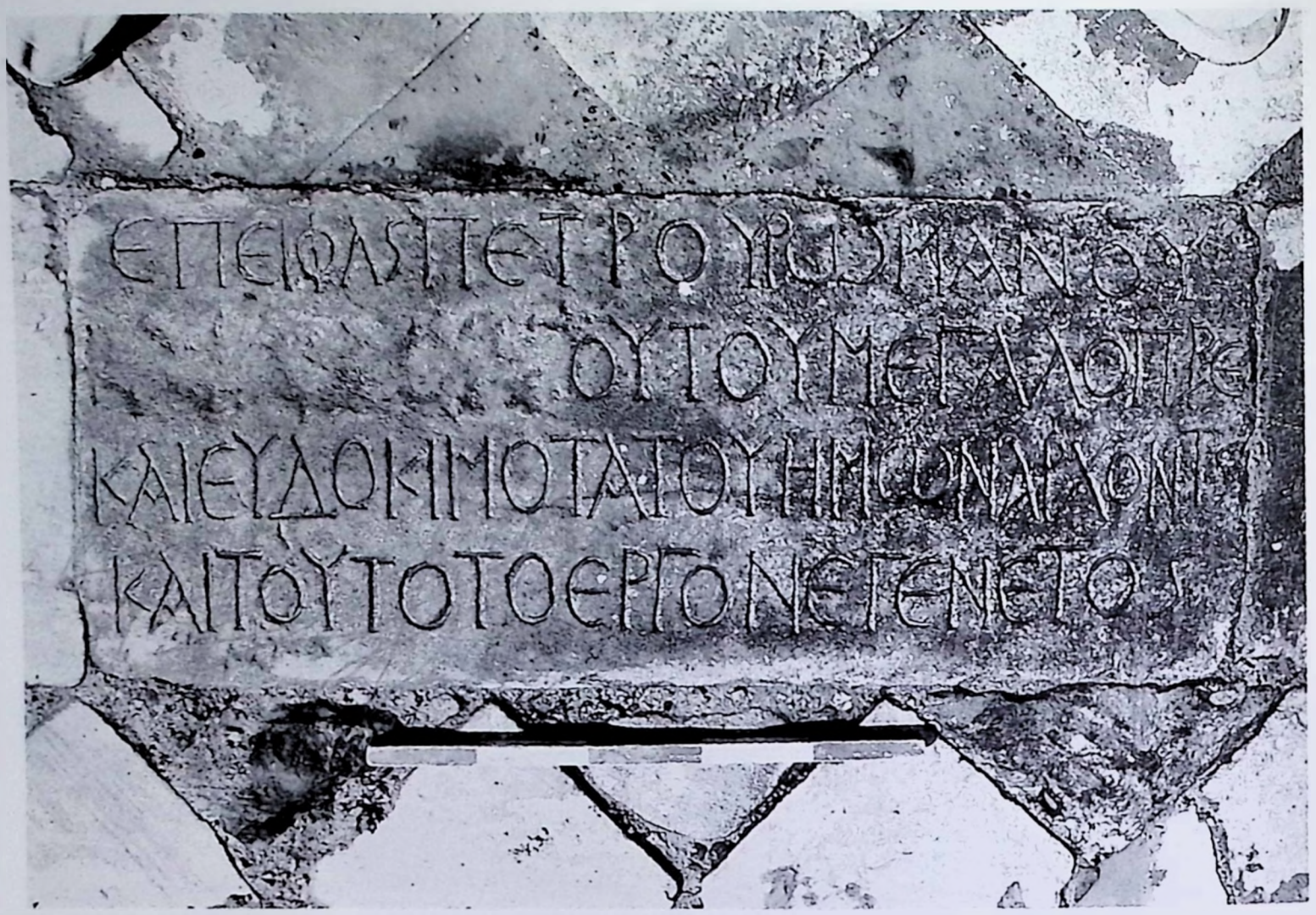
Inscription 57 (Fig. 53)

Marble plaque set in the middle of the pavement of the oval pool in Area G.
Di Segni 1992: 312, 322, fig. 4.

A dedicatory inscription commemorating the building, or rather the rebuilding or restoration of the oval pool next to the hot spring, is engraved lengthwise on a rectangular slab ca. 50 cm high and 100 cm long. The letters belong to the oval alphabet and are 5-8 cm high. The quality of the engraving is excellent, befitting an official inscription. A diagonal stroke and *stigma* are used to mark the abbreviations.

ΕΠΕΙΦΛΣΠΕΤΡΟΥΡΩΜΑΝΟΥ
- - - - - - - - ΟΥΤΟΥΜΕΓΑΛΟΠΡΕ
ΚΑΙΕΥΔΟΚΙΜΟΤΑΤΟΥΗΜΩΝΑΡΧΟΝΤS
4 ΚΑΙΤΟΥΤΟΤΟΕΡΓΟΝΕΓΕΝΕΤΟS

Ἐπ{ε}ὶ Φλ(αουίου) Πέτρου Ῥωμανοῦ
[φιλοχρίστ]ου τοῦ μεγαλοπρε(πεστάτου)
καὶ εὐδοκιμοτάτου ἡμῶν ἄρχοντ(ος)
4 καὶ τοῦτο τὸ ἔργον ἐγένετο {S}.



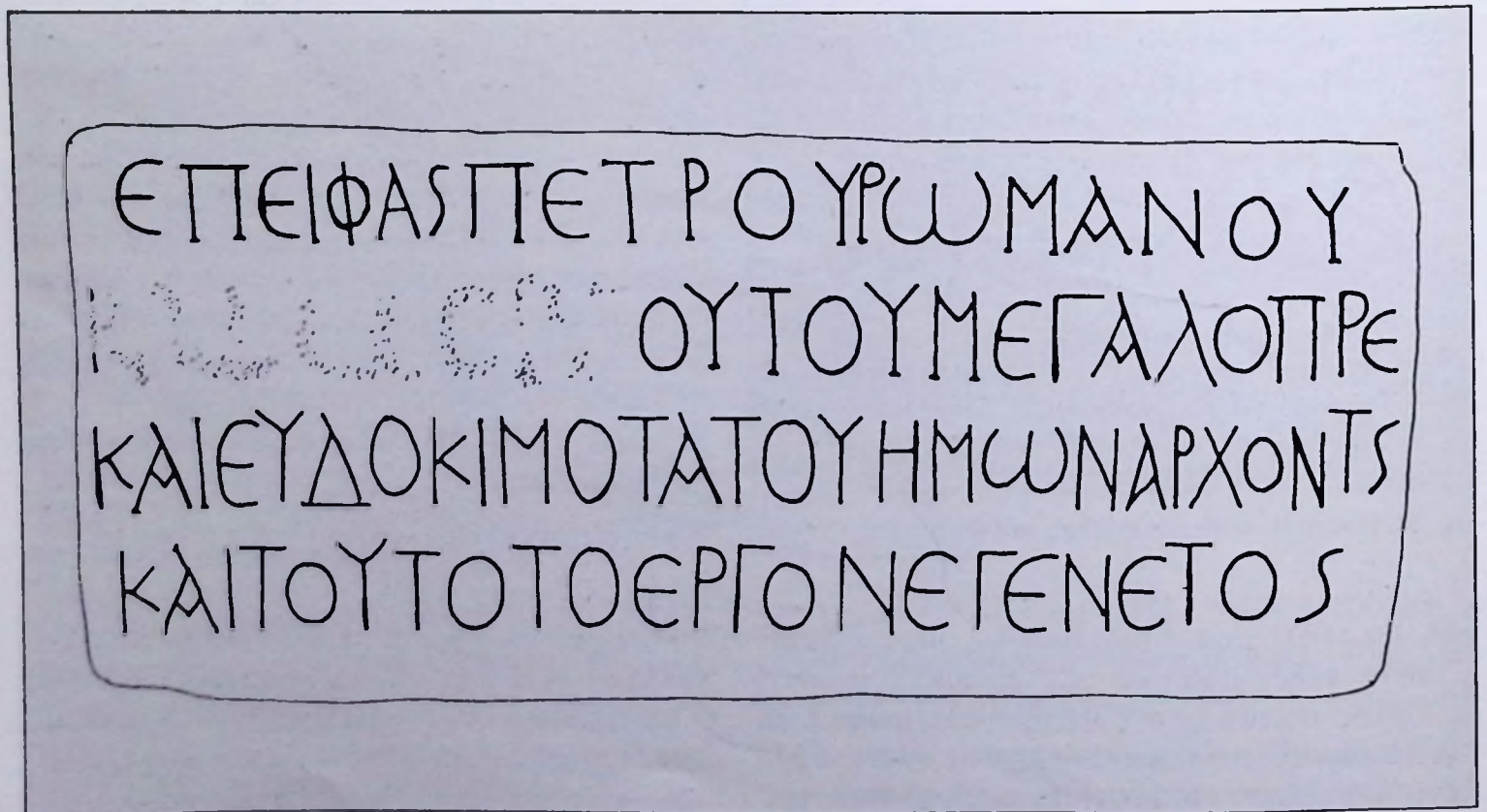


Fig. 53. Inscription 57: photograph and drawing.

L. 1 ΕΠΕΙ phonetic spelling for ἐπί L. 2 the first word was obliterated by careful chiselling. Traces of a Φ are visible at the beginning, as well as remains of the tips of other letters. The obliteration of the epithet φιλόχριστος recalls the iconoclasm of single letters in No. 27. L. 4 the *stigma* is superflous

> In the time of [Christ-loving] Flavius Petrus Romanus, our most magnificent and glorious governor, also this work was done.

Μεγαλοπρεπέστατος was not an official rank, but an honorary title. According to most scholars, it was attached to the illustrate in the late fourth and first half of the fifth century, then awarded also to *spectabiles*, probably in the second quarter of the fifth century, and to *clarissimi* only in the late sixth century (Ensslin 1929; Hanton 1927-29: 104-106; Sartre 1982b: 106, 107-108; Dagron and Feissel 1987: 62, 165). However, the epigraphical evidence lately coming to light in Palestine indicates that the inflation of this title began earlier than that. On the one hand, provincial governors ranking as proconsuls with the rank of *spectabiles* before the partition of *Palaestina* into three provinces in the late fourth century, are styled *magnificentissimi* in inscriptions.[52] On the other hand, civil governors of *Palaestina Secunda* and *Tertia*, as well as of Arabia, in the second half of the fifth century and in the early sixth century are called *magnificentissimi*, although their official rank was merely *clarissimi*.[53] Some of them are styled *comites*, but not all; therefore the title was not attached to the *comitiva*. In the light of the early devaluation of the title in the case of *spectabiles*, it seems inadvisable to allot automatically the rank of *spectabilis* to whoever is styled *magnificentissimus* even if his office implied a mere clarissimate.[54] Thus, lacking evidence to the contrary, we shall consider Flavius Petrus Romanus a governor of *Palaestina Secunda* with the normal rank of λαμπρότατος. The paleographical appearance of the inscription helps to locate him in the fifth century or in the early sixth century at the latest. Besides, governors of a later period bore titles like κόμης καὶ ὑπατικός and might rank even as ἐνδοξότατοι.[55]

Εὐδοκιμότατος is also a complimentary title, not a hierarchical one. In official inscriptions it is most uncommon: in Palestine it appears once, in the same setup, in an inscription from Elusa dated 454/5, mentioning Φλ(αουιος) Δήμαρχος ὁ μεγαλοπρεπέστατος καὶ εὐδοκιμώτατος ἄρχων (Negev 1981: 73-76). If the parallel has any chronological significance, Petrus Romanus' governorship may be dated to ca. 455, when the work referred to in Nos. 1-2 was being carried out.

It is not clear what work was executed under Romanus. The pool itself, according to the excavators, seems to have existed since the Roman phase of the baths complex. Originally it was rectangular; at some time its contour was changed to the present oval shape; further adjustments made in the paving are attested by the dedication embedded in the floor and by the cut and reused slab containing Nos. 59-61. Was the rebuilding carried out under Romanus, or was the pool only restored by him? It is worth recalling the last verse of No. 1: 'having let pleasant water to be drawn elsewhere.' When the pools in Areas C and E were filled, a new bathing area was opened somewhere else, perhaps by putting back into operation an inoperative pool. This might be the one in Area G. The material recovered from soundings under the pavement of the oval pool is similar to the material (especially lamps from the fourth and early fifth century) discovered under the dated pavements of Areas C and E. Incidentally, the name Petrus could fit in the meter at the beginning of the above-mentioned verse: but it does not seem to fit the traces of letters visible in the gap. However, the building operations were far-reaching and it is quite possible that they began under one governor and were completed under another, each claiming his share of glory.

Inscription 58 (Fig. 54)

Slab of dark gray marble in the pavement of the oval pool, immediately to the north of No. 57. Unpublished.

The inscription is engraved along the upper edge of a slab 45 cm high, 61.2 cm long and 4 cm thick. The two lines, 54 cm long, slope downward to the right. The letters are 2 cm high. The script ends with an ivy leaf. Under the inscription is incised a cross enclosed in a circle. The diameter of the circle



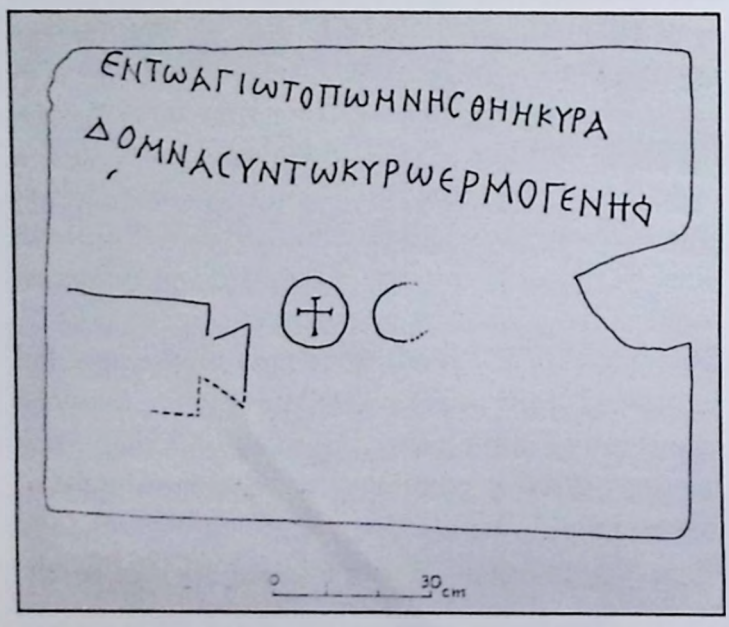


Fig. 54. Inscription 58: photograph and drawing.

is 6.5 cm and the cross measures 3.5×3 cm. A *tabula ansata* is engraved in the lower left corner of the slab.

ΕΝΤΩΑΓΙΩΤΟΠΩΜΝΗCΘΗΗΚΥΡΑ
2 ΔΟΜΝΑCΥΝΤΩΚΥΡΩΕΡΜΟΓΕΝΗ(*haedera*)
+

Ἐν τῷ ἁγίῳ τόπῳ μνησθῇ ἡ κύρα
2 Δόμνα σὺν τῷ κύρῳ Ἑρμογένῃ.

In this holy place may the lady Domna be remembered, with the lord Hermogenes.

As the woman took precedence over the man, the couple were probably not husband and wife, but mother and son.

Inscription 59 (Fig. 55)

Flagstone in the pavement of the oval pool in Area G, to the north of No. 58.
Unpublished.

A stone 44 cm long, 25 cm high, with the lower right corner missing, bears at least two inscriptions, and possibly traces of a third. The first (A) occupies the right side and consists of four lines, all lacking an end; an additional line is missing at the beginning. Seemingly this inscription was engraved on a larger stone, later reduced in size and reused in the pavement of the pool. Traces of three letters in the upper left corner of the stone (B) may also belong to this phase. After the stone had been recut and set in the pavement, another inscription was incised in the empty space on its left side. The earliest inscription (A) has large square letters, from 2.5 to 10 cm high.

A	- - - -	[Ἐν τῷ ἁ-]
	ΓΙΩΤΟΠ̣ - -	γίῳ τόπ[ῳ]
	Μ̣Ν̣ϹΚΑ̣ΙΒ - -	μν(ή)σ(θωσιν ?) καὶ Β - -
	ΕVΦΡΑϹ - -	Εὐφράσ[ιος καὶ ?]
4	ΦVΡΜ̣ - - -	Φυρμ[ῖνος.]
B	Ω̣ΤΟ	[Ἐν τ]ῷ̣ τό(πῳ)

B may represent the beginning of an inscription that was abandoned

In this holy place may be remembered also B... and Euphrasius and Firminus.

Inscription 60 (Fig. 55)

Later inscription on the same flagstone.
Unpublished.

The letters of this later inscription are 2-3 cm high, accurately carved and adorned with serifs. The beginning of all three lines is missing.

	. ΝΤΩΑΓΙΩΜΗΘΝ̣	[Ἐ]ν τῷ ἁγίῳ μ(ν)η(σ)θῇ
2	. ΟΠΩΜΝΗΘΗ	[τ]όπῳ μνη(σ)θῇ
	. ΡΟΚΟΠΙΑ	[Π]ροκοπία.

L. 1 The stonecutter began to write μνησθῇ in the wrong place and incorrestly spelled

In this holy place may Procopia be remembered.



Fig. 55. Inscription 59-60: photograph.

Inscription 61 (Fig. 56)

Flagstone in the pavement of the oval pool in Area G, east of No. 57.
Unpublished.

Part of a three-line inscription is incised on a stone measuring 25×27 cm. The stone was originally larger, and was recut to be set in the pavement of the pool. The letters are 3.5-5.5 cm high. In the last line, only the tips of the letters are visible.

. . ΤΩΑΓΙΩ	[Ἐν] τῷ ἁγίῳ
2 . . ΠΩΜΝΗϹ	[τό]πῳ μνησ-
. . ΜΑΡΩΝΑ.	[θῇ] Μαρώνα[ς] (?)

L. 3 the last A is uncertain: perhaps MAPΩN

In this holy place may Maron be remembered.

The name Μάρων, or Μαρώνας, corresponding to the Latin Maro, appears in inscriptions of the late Roman period at Caesarea, in Galilee and Bashan (*SEG* 26, no. 1674; 28, no. 1346; Abel 1908: 576).

Inscription 62 (Fig. 57)

Fragment of stone recovered from the oval pool Area G.
Unpublished.

A three-line inscription is engraved on a stone measuring 20.5×26.5 cm, broken around the edges. The gap at the beginning of each line contains five letters, as can be easily calculated from ll. 2 and 3. The letters are 2-3 cm high and belong to the round alphabet. The *nomen sacrum* is marked with a horizontal stroke.

	. . . . . CΘ̄CBOHΘIΓENNA
2	. . . . . APXIKΩKAITOIC
	. . . . . CAYTOY

[Κύριο]ς Θ(εὸ)ς βοήθ(ε)ι Γεννα-
2 [δίῳ ἐπ]αρχικῷ καὶ τοῖς
[τέκνοι]ς αὐτοῦ.

O Lord God, help Gennadius the *praefectianus* and his children.

On the *praefectiani*, see above, commentary to No. 17.



Fig. 56. Inscription 61: photograph.



Fig. 57. Inscription 62: photograph.

Inscription 63 (Fig. 58)

Fragment of marble discovered among the debris.
Unpublished.

A fragment of marble measuring ca. 35×40 cm, forming a corner of a plaque, is engraved with a molded frame: only the lower left corner of the frame remains. Under the frame is an inscription opening with a cross. The letters are 3-3.5 cm high.

+MNHCΘIẊ - - Μνησθῖ Ẋ[αχαρίας ?...]

May Z[acharias?] be remembered.



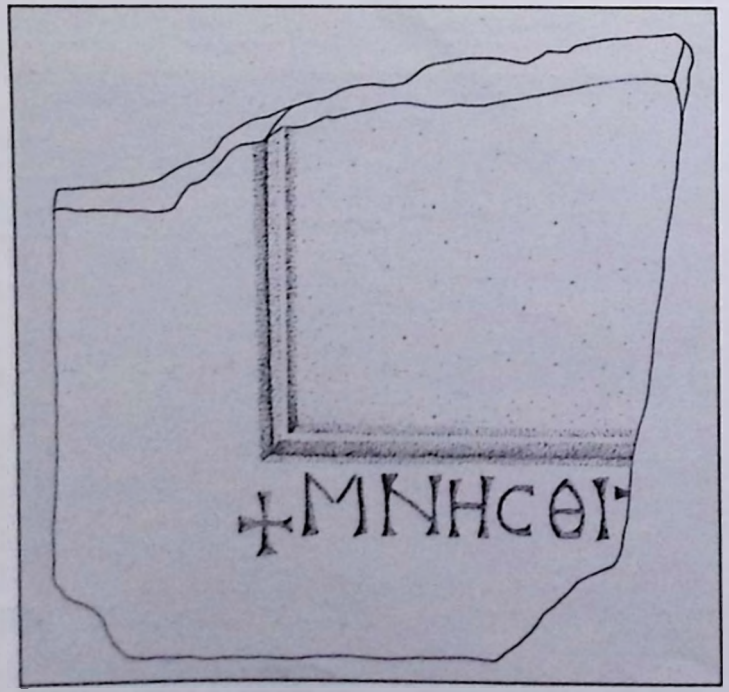


Fig. 58. Inscription 63: photograph and drawing.

Inscription 64 (Fig. 59)

Large piece of plaster found among the debris.
Unpublished.

An inscription is painted on a piece of plaster (ca. 40×22 cm) from a wall of Area E. Except for isolated letters it is wholly illegible.



Fig. 59. Inscription 64: photograph.

Inscription 65 (Fig. 60)

Fragment of marble discovered in the fill in Area J (L. 900).
Unpublished.

A piece of marble measuring ca. 20×18 cm bears a fragment of inscription consisting of at least three lines. The letters, beautifully engraved, belong to the oval alphabet and are 7 cm high.

- - Λ̣ NOẠ[- - - -
2 - Ẹ̣ENANHPĮ̣ - -
- Λ̣ENEONT - - -

[- Φ]λ(άουιος ?) Νοα[ρος ? - -]
2 [? ἐποίη]σεν ἀνὴρ π[ερίβλεπτος ? -]
[- -] λέ̣νεον τ[ὸ - - -]

L. 1 The empty space before N may have been occupied by a lifted *stigma*: ΦΛ[ˢ] L. 3 ΛENEON phonetic spelling of λαίνεον?



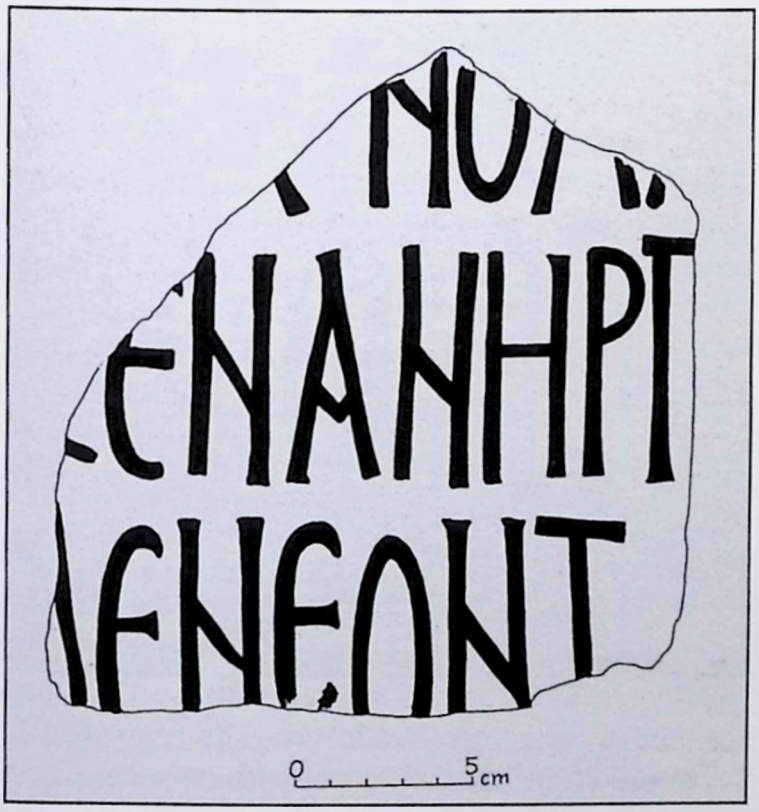


Fig. 60. Inscription 65: photograph and drawing.

..Flavius Noaros made .., *vir spectabilis*, the ... of marble.

The reconstruction proposed here is purely conjectural. Νοαρος, Νοαιρος is a well-known Semitic name (Wuthnow 1930: 83-84).

Inscription 66 (Fig. 61)

Fragment of marble discovered among the debris in Area C.
Unpublished.

A roughly triangular fragment of marble, measuring ca. 18×18 cm, contains the remains of three lines: of the third only the tips of some letters are preserved. The letters are 5 cm high, carefully engraved, and belong to the oval alphabet.

- - - ϹΚΕϹΑ - - - -	[- - -]ς Κεσα[ρεύς - -]
2 - - - ΜΕΝΟϹΤΑΔ -	[- - -]μενος τάδ[ε - -]
- - - - - ΓΟΝΟΥ -	[- - -]γόνου - -





Fig. 61. Inscription 66: photograph and drawing.

L.2 desinence of participle aorist: εὐξάμενος could fit, but this is merely a guess

[So-and-so] of Caesarea, having [made a vow?], ...these things ..

Inscription 67 (Fig. 62)

Fragment of stone discovered among the debris. Unpublished.

A fragment of stone measuring ca. 26×28 cm contains a fragment of inscription set in three lines. Two more line are missing at the beginning. The letters, 5 cm high, are carefully engraved and belong to the round alphabet.

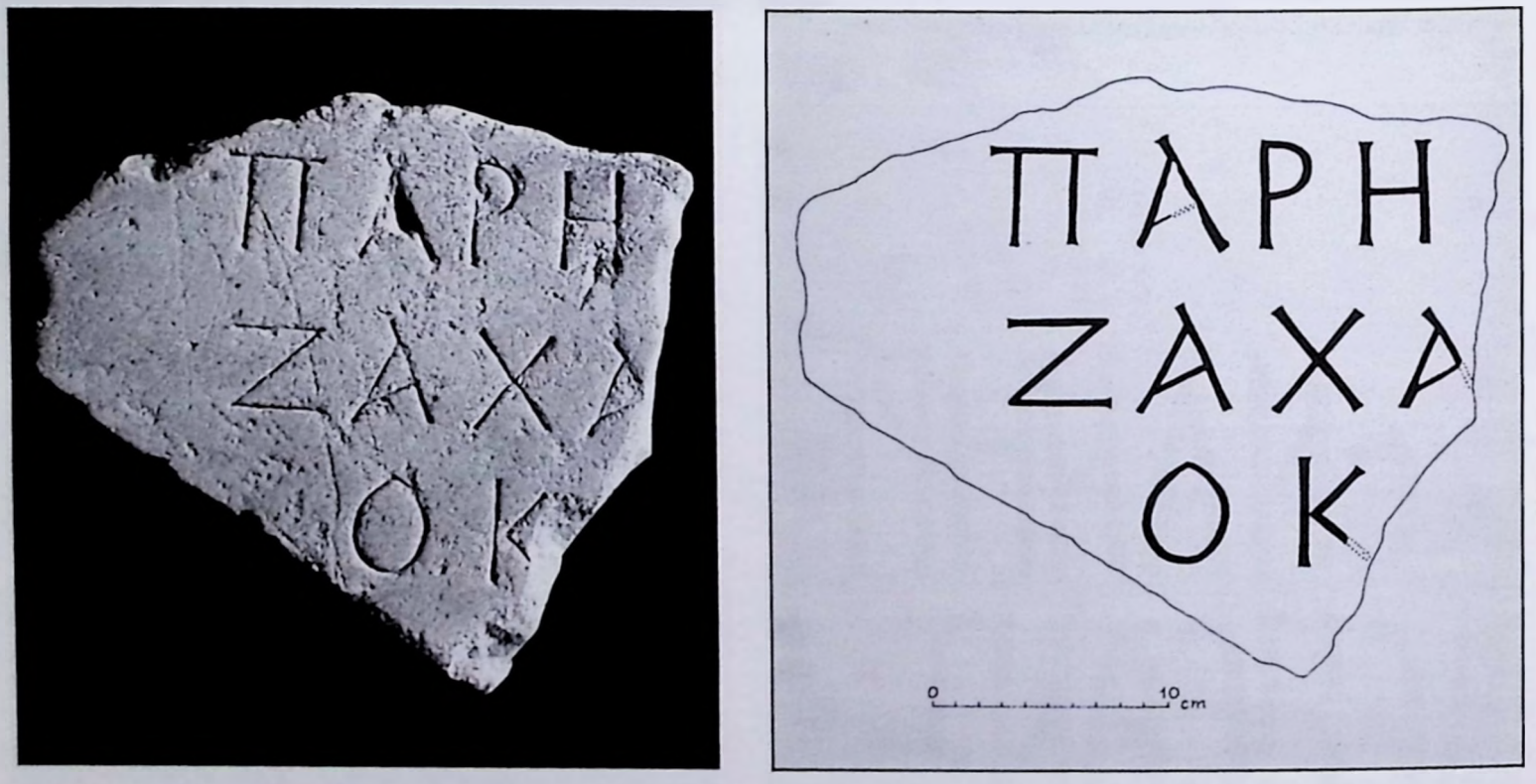


Fig. 62. Inscription 67: photograph and drawing.

---	[Ἐν τῷ ἁγίῳ or καλῷ]
---	[τόπῳ μνησθῇ]
ΠΑΡΗ	Παρη[γόριος]
2 ΖΑΧΑ	Ζαχα[ρίου]
ΟΚ̣Α̣	ὁ κα[ὶ - - -]

[In this holy (or: beautiful) place may be remembered] Paregorius (son) of Zacharias, also (called) ...

The name Paregorius ('consoler,' a direct translation of the Hebrew Menachem) was especially popular among the Jews. A Paregorius is mentioned on the chancel screen of the synagogue of Hammat Gader, others appear in the synagogue at Beth She'arim (a rabbi: Schwabe and Lifshitz 1974: 194, no. 208) and in epitaphs from the Jewish cemeteries at Beth Shearim, Caesarea and Jaffa (*SEG* 8, nos. 30, 139-140; 19, no. 910; Frey 1952, nos. 939, 944, 945; Lifshitz 1961: 115-116, no. 2; 1965: 98-99, nos. 1, 2; Schwabe and Lifshitz 1974: 20-21, 40, 58-59, nos. 31, 61, 83); the name also appears in Jewish inscriptions in the Diaspora (Frey 1936, nos. 497, 670). Since Zacharias too was originally a Jewish name – though later it was appropriated by the Christians – chances are that the man was of Jewish descent. Possibly his second name was purely Greek, as it would certainly have been if he had converted (cf. No. 2).

Inscription 68 (Fig. 63)

Fragment of stone recovered from the debris. Unpublished.





Fig. 63. Inscription 68: photograph and drawing.

A fragment measuring ca. 16×20 cm contains some letters belonging to three lines of a carefully engraved inscription. The letters are 3-4 cm high. Too little of the script is preserved for a restoration to be proposed; however, one thing is clear: the text is not based on the common formula Ἐν τῷ ἁγίῳ τόπῳ μνησθῇ ... On the contrary, the words are not easily identified and seem to form a poetic composition.

.ΡΟCΠΑ
2 ΙΝΟΝΕΙΡ [- - θερινὸν εἰαρ[ινόν τε - -]
ΡΙCΑΙΤΟ [- - χα]ρίσαιτο - -

The first line may contain the root of the verb προσπαίζειν, 'to sing the praise of.' The second line suggests θερινόν, 'of summer,' and εἰαρινόν, 'of spring' – an allusion to the hot and lukewarm water in the pools?[56] The third line suggests χαρίσαιτο, optative of χαρίζομαι, 'to give freely,' perhaps said of the *clibanus* that poured forth an abundance of hot and tepid water.[57]

Inscription 69 (Fig. 64)

Three fragments found together in Area A. Unpublished.

The three fragment were discovered in a single locus (L. 106) and have the appearance of belonging to a single slab, but do not fit together. The largest measures but 8×13 cm and preserves the remains of two lines; in spite of the excellent quality of the engraving, only a few letters are legible. In all three fragments the characters are 2-3 cm high and belong to the oval alphabet.

A ΙΠΑΙ
ΟΝΑΓΑΡ

Β CΠΑΙΛ
COΕΛΙΚΤ

C CΠΕΛ

In fragment A, the adjective ἀγάρροος, 'strong-flowing,' suggests itself, perhaps said of the *clibanus*: [κλίβαν]ον ἀγαρ[ροον]. B might contain the term πυρσοέλικτος, 'writhing in fire,' again, an allusion to the hot whirling stream pouring out from the spring? C might contain the word πελώριον, 'portent.' These scanty fragments, the reading of which is entirely conjectural, nevertheless convey the impression that the inscription was a eulogy of the baths conceived in poetic language. Possibly this and the preceding inscription were set up on the walls.

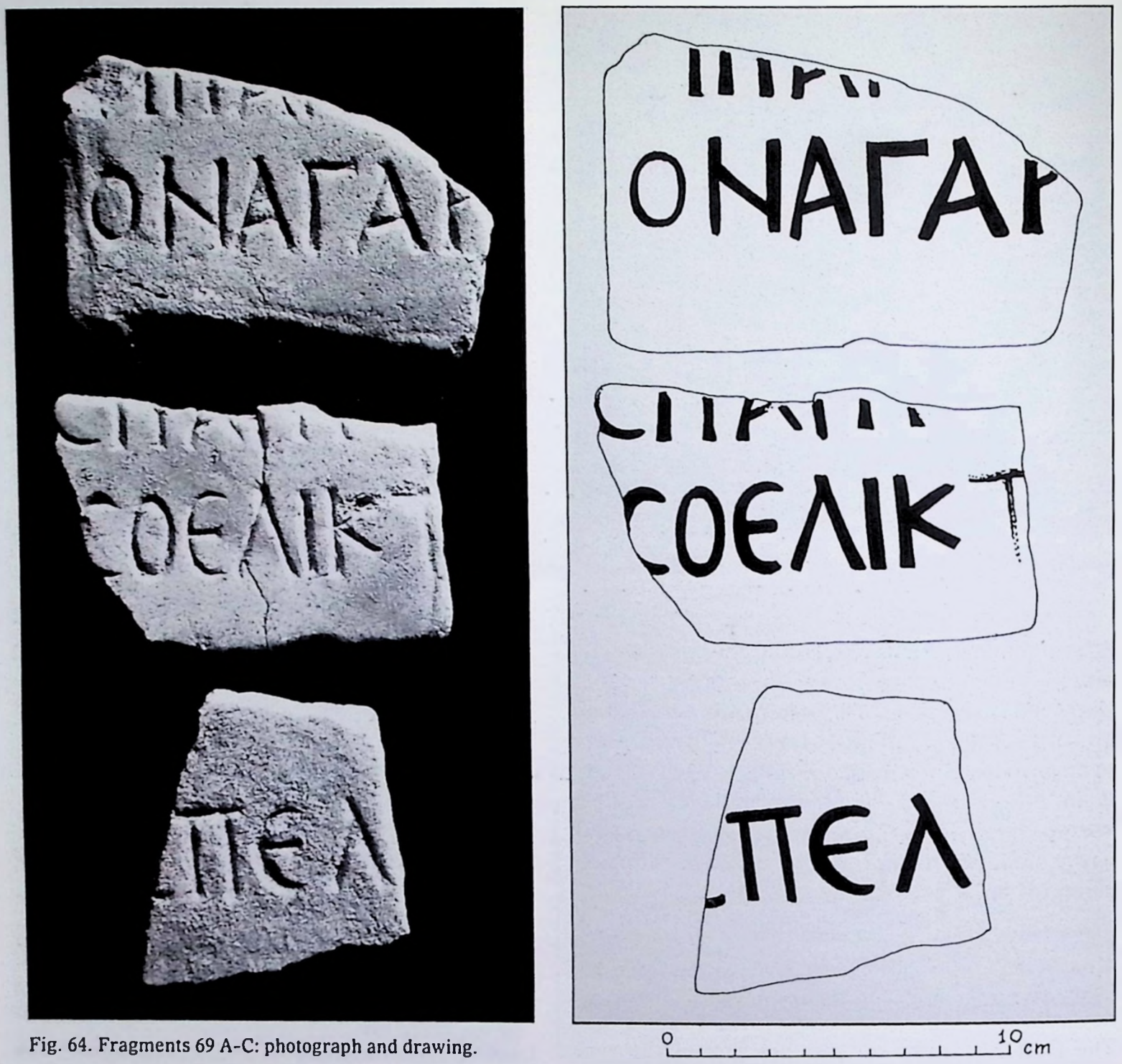


Fig. 64. Fragments 69 A-C: photograph and drawing.

Inscription 70

Fragment of stone found among the debris. Unpublished.

This fragment, ca. 35 cm long, contains the final part of three lines. Probably the entire text consisted of four lines or more. The letters are 5 cm high.

- - - CHNBIΩ
2]ANINAN
XAPICTIAC

[- - ἅμα τῇ] σηνβίῳ
2 [- - κα]ὶ Ἀνίναν
[ὑπὲρ or μετὰ εὐ]χαριστίας.

[So-and-so dedicated this together with his] wife, ... and Aninas.., as a thanksgiving.

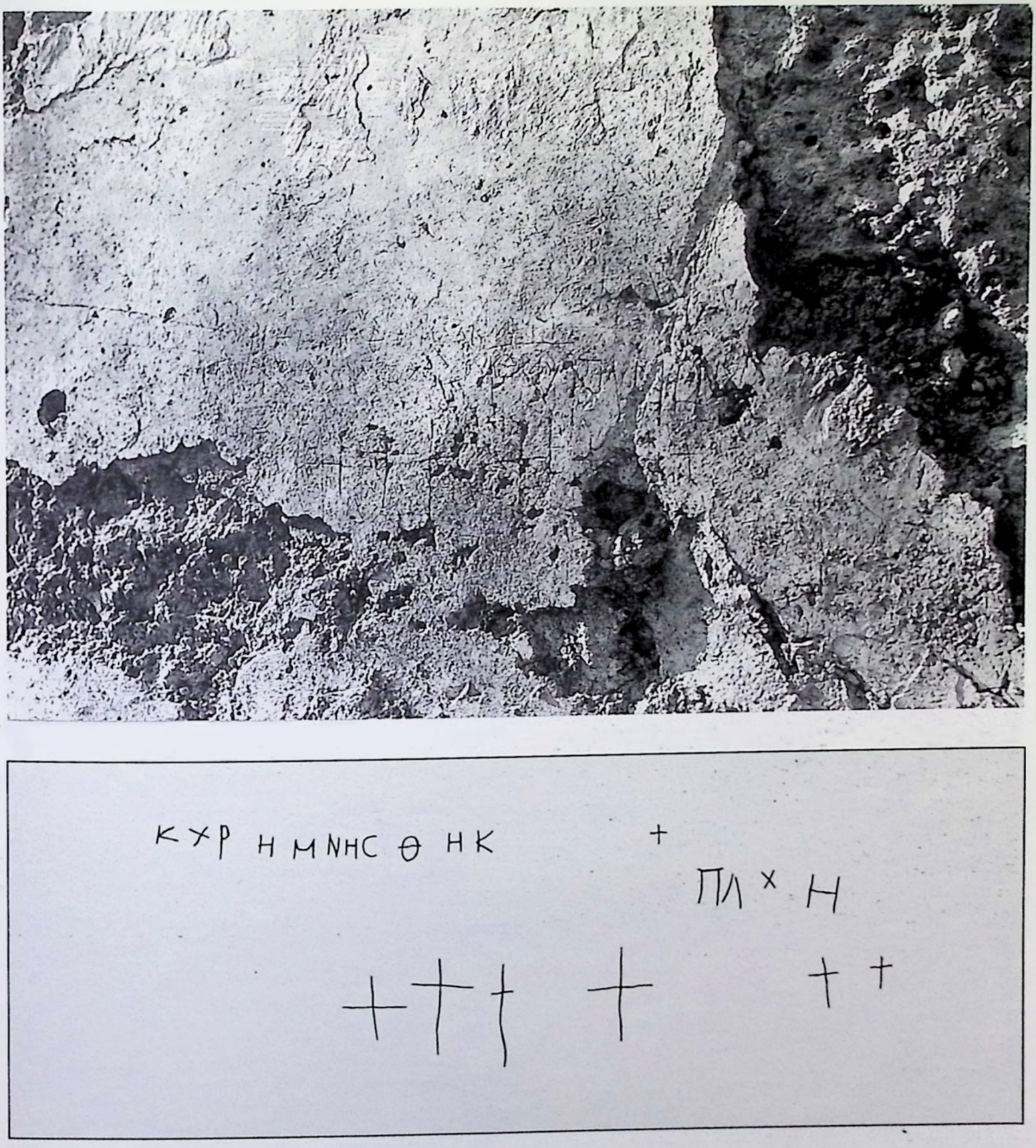


Fig. 65. Inscription 71: photograph and drawing.

Inscriptions containing the formula εὐχαριστῶν, μετ᾽ εὐχαριστίας or ὑπὲρ εὐχαριστίας generally refer to dedications or the offering of a token of gratitude; in other words, this text does not belong to the category of the *proskynemata*. Ἀνίνας corresponds to the Aramaic name Hanina. The accusative is puzzling.

Inscription 71 (Fig. 65)

Graffiti on plaster.
Unpublished.

Several crosses and Greek letters were scratched on the plaster of the eastern face of the second pier of the western row in Area E. Only some words can be made out.

ΚΧΡΗΜΝΗCΘΗΚ Κ(ύριε) Χρ(ιστ)ὴμνήσθη Κ - -

Χρη(στέ) ορ Χρ(ιστ)ή

Lord Christ, remember C...

The name of the dedicator is lost. Μνήσθη is a phonetic spelling of the vernacular form of the imperative μνήσθι (= μνήσθητι), very common in Byzantine inscriptions. Also Χριστέ is misspelt. These graffiti seemingly belong to a later period than the inscriptions engraved on the pavements of the baths.

Inscription 72 (Fig. 66)

Fragments of plaster.
Unpublished.

Some fragments of plaster bear letters, scratched or painted. Only minimal traces are visible and no words can be made out.



Fig. 66. Graffiti on plaster fragment 72: photograph.

CONCLUSIONS

The pavement of Area E, the richest in epigraphic finds, can best illustrate the process of insertion of the inscriptions during the development of the building.

Some inscriptions are clearly 'built in' with the paving. This is the case of No. 2, set in front of the entrance, and of No. 3, next to it, with its molded frame. A molded frame and a strategic position in front of the passageways leading to the adjoining rooms make it likely that Nos. 20 and 23 also belonged to this stage, and that the marble workers who dedicated them were members of the team that laid the pavement. In all probability an official inscription was embedded in the floor in the middle of the room, corresponding to No. 1 in the center of Area C. The key flagstone is missing; but No. 33, next to it, is assigned to the early stage of the pavement by the dates of Zeno's patriciate and his death.

Several other inscriptions in Area E can be assigned to the fifth century on the basis of their palaeography, although this cannot be taken as decisive proof, especially when the square alphabet was used. The popularity of this alphabet waxed and waned in the region throughout the Byzantine period, during which time it underwent no significant changes. In contrast, the round alphabet did change in a recognizable way in the course of the sixth century. On the basis of this assumption, we can detect no evidence of scripts later than mid-sixth century, either in Area E or elsewhere (at least in well-preserved inscriptions written in the round alphabet), except for No. 54, dated 662 C.E., that shows unequivocal signs of its late date, especially the ogival *omicron* and *theta*.

On the other hand, not all the dedications were written in the early stage of the pavement, and there is evidence of additions at a later time. This can be detected in such cases where inscriptions were added on flagstones already bearing engraved texts: for example, No. 15 was undoubtedly written after No. 14, No. 19 is later than No. 18, Nos. 24-25 were added to No. 23, No. 34 to No. 33, Nos. 41-42 to Nos. 40 and 43.[58] No. 37 certainly postdates the laying of the pavement, both according to its spelling and because it is not a building inscription, though it mentions a governor; normally a governor affixing his name to a new or newly restored building would appear as the eponym and the initiator of the project. Summing up, it seems that in Area E a number of inscriptions were engraved when the pavement was laid, and others were added later for a period of time; then the vogue died out, or the authorities no longer permitted it, until the Arab period, when additions were made once more.

Likewise, the inscriptions in Area G belong to different phases. No. 60 was incised when the stone surface was already partly occupied by No. 59, and it seems that Nos. 59 and 61 belonged to an earlier stage, when the pavement was made of larger flagstones. As to Area D, No. 55, that is embedded in the wall of the pool, has an early appearance, Eudocia's inscription cannot be dated before 439 and was possibly set in place only in 455 (although in all likelihood the poem was composed earlier), while the inscriptions on the walls dictated by Mucius Alexander and Leo, and under the caliph Mu'awiya, bear evidence of later rebuilding and restoration. Arabic and Kufic inscriptions document the last phase of existence of the building.

The history of the baths complex in the Byzantine period is faithfully recorded by the inscriptions and fits in very well with the archaeological evidence. The sealing of the pools in Areas C and E, and probably also in Area B, is explained and dated by Nos. 1, 2 and 33. It began when one of the pools collapsed, killing many bathers. This may have been due to several causes, but Malalas' report of an earthquake affecting Phoenicia during the reign of Marcian, the evidence of the many early lamps which had fallen into the pool in Area B, as well as the extensive building operations that followed, all lead to the conclusion that the damage was considerable and could have been caused by an earthquake; this occurred in early 455 at the latest and can probably be identified with the catastrophe that killed 'one third of the world,' mentioned in two inscriptions from the 'Aravah, one of which is dated June 11, 455 (see above, n. 4). The setting of the slab with Eudocia's poem in the pavement of Area D makes it likely that the renovation extended also to this area.

According to No. 1, when the sports area took the place of the collapsed pool, a new bathing area was opened. The date proposed for No. 57 – based on independent arguments – prompts the suggestion that the oval pool in Area G was then restored, or put back into operation, or possibly made available for bathing by the addition of flows of cooler water that tempered the heat of the spring that fed the pool. The *incubatio* described by Antoninus Placentinus (*Itinerarium* 7: 132) was certainly not a sixth-century innovation, and the unused lamps stored in Area B make it likely that the small pool there was the site of the *incubatio* until it was sealed. It was then necessary to provide another setting for this practice: according to Antoninus Placentinus, the bath used by the lepers in the sixth century was located 'ante ipsum clibanum,' i.e., in front of the source of the hot spring. The description exactly fits the pool in Area G.

The building operations is 455 appear to have been the most extensive ones in the Byzantine period. Some rebuilding was carried out under Anastasius, but its extent is not clear. Likewise, it is unclear what was meant by Mucius Alexander's phrase 'ποιεῖν τὸν θόλον', as the semicircular alcove in Area D where the inscription was found formed part of the original plan.

Repairs in the *tholos* were carried out by Leo not later than mid-sixth century, if one judges by the palaeography of his inscription. The activity in the Muslim period, according to the proposed interpretation of ll. 2-3 in Mu'awiya's inscription, was restricted to cleaning and maintenance operations.

Seemingly, neither Alexander, Leo nor the Arabs made changes in the pavement,[59] except for the removal of the crosses. These were obliterated very neatly, by careful chiselling – which raises the question whether the deletion was carried out by Muslims as an anti-Christian gesture or in the Byzantine period, as a token of respect for the holy symbol. It is well known that in 427 Theodosius II forbade the depiction of crosses in places where they could be trodden upon (*CJ* 1, 8, 1). The churches of Shavei Zion and 'Evron are usually cited as examples of the observance of this edict in Palestine: in both, mosaic pavements featuring crosses were covered by new ones, or altars and tables were built over the crosses (Avi-Yonah 1955: 20-22; 1957: 34-35; 1967: 52-53; Tzaferis 1987: 36*-53*). However, in the case of Shavei Zion we have no precise date for the pavement that hid the crosses: it is only known to antedate, presumably by a prolonged period, a later (third) pavement dated by an inscription to 486 C.E. (Avi-Yonah 1967: 58-60). As for the church at 'Evron, the second-stage pavement that hid the crosses and monograms of the earlier floor was laid only in 443, on the occasion of major constructive changes. It seems therefore inadvisable to strictly link the second pavements of the two churches with the issuance of Theodosius II' s decree, either as a chronological or as a causal sequence. In fact, it is impossible to establish how swift was the response to the imperial command, assuming that it was obeyed at all. At Hammat Gader, no less than 16 inscriptions embedded in the floor of Area E are decorated with one or more crosses, and all are later than 455. Even Eudocia's inscription is adorned with crosses, in defiance of her husband's order. It is obvious, therefore, that nobody took much heed of this particular law, except perhaps the more scrupulous members of the clergy in their churches, and even they did not immediately carry out the order, but waited until a real need arose for the renovation of the floors.

It is possible, however, that in a later period, perhaps when Justinian renewed this law by including it in his Code, a decision was taken to comply with it: Justinian, a confirmed meddler in religious issues, might have insisted on the fulfilment of his order in this matter. Since a marble floor could not easily be replaced, the obliteration of the crosses by chiselling might have been considered a practical solution. On the other hand, the word φιλοχριστός was deleted too, which would point to 'iconoclasm' at the hands of of Muslims. The question of who was responsible for this work must therefore remain open.

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NOTES

1. This form of self-denial comes under the heading of Jewish influence, prohibition of washing being a rule of penitential behavior among the Jews.
2. See Augustinus, *Epistulae* 211, 13: 396-399; Barsanuphius, *Quaestiones*: 336; Cyr. Scyth., *Vita Jo. Hesych.* 3: 203; Jo. Moschus, *Pratum* 80, 184: 2937-2939, 3057. Cf. Jones 1964: 976-977. Visits to mineral springs for purely health reasons were permitted: *Vita Petri Iberi*: 89-90; *Vita Theodori Syceotae*: 145-146.
3. The topographic configuration of the site does not permit any other explanation, for instance a landslide, which might be suggested by the adverb ὑπέρθεν. On the other hand, the destruction may have been a belated result of an earthquake that undermined the foundations of the hall. Inscriptions commemorating death in earthquakes, and the recostruction following the catastrophe, are numerous; Robert (1978) gathered material from all over the Mediterranean basin, from the Hellenistic to the Late Roman period.
4. On the earthquake of 447, see Kallner-Amiran 1951: 225; however, Russell (1985: 39-40) rejects the assumption that this earthquake, which according to the historical sources affected Asia Minor, also caused destruction in Palestine. On the other hand, strong seismic activity centered in Phoenicia may well have also affected Palestine. If this is truly the event referred to in the epigram, inscriptions 1 and 2 can help to pinpoint its date: between the beginning of Marcian's reign in August 450 and the first half of 455 at the latest. It is worth noting that a catastrophe, possibly an earthquake, is mentioned also in two epitaphs, one of which is dated June 11, 455, from Phaenon in the 'Aravah: Alt 1935: 67-72; Sartre 1993, nos. 107-108.
   The revised list of earthquakes published by Amiran et al. still cites the seism of 447 with reference to Hammat Gader, in spite of Russell's well-founded objections: Amiran, Arieh and Turcotte 1994: 266, 290. The authors even quote the inscriptions of the

baths complex and Hirschfeld (1987) and (1994) in support of their surmise that the 447 earthquake did indeed affect Palestine and specifically Hammat Gader. Moreover, in the authors' view, the catastrophe would have put the baths out of use until their restoration by Mu'awiya. In both statements Amiran *et al.* misinterpret and misquote Hirschfeld.

5. Cf. Pape and Benseler 1911: 1001; Foraboschi 1971: 69, 207; *SB*, nos. 5084, 8951, 10089. Other possibilities are Νιλᾶς, Νιννᾶς (Foraboschi 1971: 208), or Νυμφᾶς (Pape and Benseler 1911: 1019), all very rare names, or Νυσᾶς for Νύσαιος, Νύσιος; Flavius Sergius Nysius (or Anysios?) was governor of *Palaestina Secunda* in 534/5 (Mazor 1987/88: 17).
6. The indictional year began on September 23 up to 462 C.E., when its start was shifted to the first of September: cf. Grumel 1958: 193-202.
7. It is not inconceivable, however, that Marcus may have been seconded to a local branch of the governor's office, located at Gadara itself, as Byzantine ostraca from Oxyrhynchos, pertaining to a distribution in kind, mention *exceptores* together with other members of a local *officium*: *SB*, no. 2253.
8. The city of Gadara, of which Hammath Gader was a suburb, is called in an inscription χρηστομουσία, 'accomplished in the arts': Clermont-Ganneau 1897: 142.
9. For Nicasius, see Pape and Benseler 1911: 1001; Preisigke 1922: 234; a Kaleonistos is probably mentioned in an epitaph at Caesarea: Euting 1885, no. 78; see also Preisigke 1922: 160. On the Germanic name Dagalaifus, see Schönfeld 1911: 68-69, and for Goths called Dagalaifus, see Jones, Martindale and Morris 1971: 239; Martindale 1980: 340-341. On Goth slaves imported into the empire, see Jones 1964: 853.
10. *Histriones*, like prostitutes, were included in the category of *infames*: cf. Tertullianus, *De spectaculis* 22: 284-287; *Dig.* III, 1, 1; *Instit.* V, 5, 7; *CTh* XV, 7, 1-13; *CJ* V, 5, 27, 1; Warnecke 1913: 2127-2128. In the sixth century they were deprived of certain civil rights, e.g., the *ius accusandi*, i.e., the right to serve as witnesses both in the ecclesiastical tribunals and in the State courts of law: *Register Ecclesiae Carthaginiensis* XVIII, no. 129 (Munier 1974: 231); Olagnier 1899.
11. On the festival and the cities that were named after it, perhaps because they hosted the celebrations, see also Büchler 1901: 125-128; Clermont-Ganneau 1898: 168; 1901: 276, 339-345; Darenberg and Saglio 1926: 1555-1556; *PWRE* XIV,1 (1928): 610-613; Robert 1936: 9-14; Robert and Robert 1978: 497-499, no. 522.
12. Astronoe is the name of a goddess, seemingly Astarte: cf. Seyrig 1963: 20-26; Février 1968.
13. In this sense already συμφυλέται in I Thess. 2, 14.
14. On the last Tigranes of Armenia (ca. 339-ca. 350), see Jones 1964: 85; Jones, Martindale and Morris 1971: 913. The Armenian kings' capital was called after them Tigranocerta, and was renamed Martyropolis after the conversion of Armenia to Christianity in the fourth century: Syme 1983: 61-70.
15. In the sixth century the Armenian community had its own Monophysite bishop in Jerusalem: Van Esbroeck 1968: 362-371.
16. See Preisigke 1922: 25-26; Foraboschi 1971: 28-29. For the diffusion of the several variants of the name, see for instance *SEG* 1990: 10-11: most examples come from Africa, some from Greece. However, Wuthnow (1930: 20) lists Ἀμμώνιος among the Semitic names, as does Negev 1991: 52, no. 911; 132, no. 2101. The name derived from the Arabic root ʿMN appears in Nabataean, pre-Islamic Arabian, and Safaitic inscriptions: Cantineau 1932: 132; Harding 1971: 441; Winnett and Harding 1978: 598.
17. It seems exaggerated to suppose that the coins were weighed in *all* transactions, as maintained by Jones (1964: 444-445); the letter of the law stated that the ζυγοστάτης should intervene only in cases of dispute. At least in one case – in the collection of the *aurum coronarium* – it was forbidden to weigh the gold (Jones 1964: 430). On the profession of ζυγοστάτης, see Robert 1958: 37-38.
18. On the social status and legal disabilities of *histriones*, see above, note 10.
19. Waddington and Le Bas 1870 cite no less that 37 cases. The main collections of inscriptions from the Hauran offer additional occurences. Ewing (1895) cites eight cases (nos. 34, 58, 61, 67, 85, 131, 148, 184), Dussaud and Macler (1903) eight cases (nos. 31, 36, 45, 46, 53, 59, 67, 100); Dunand (1932, 1933 and 1959) lists 19 more (nos. 22, 26, 40, 67, 78, 89, 97, 112, 125; 181, 182, 184, 214, 219; 256, 284, 313, 332, 336); for Bostra, see Sartre 1982, nos. 9002, 9112, 9232, 9233, 9266, 9342, 9343, 9358, 9396, 9415. Some of the men who bear this name are legionaries, but their patronymics betray their Semitic ancestry. Many bear Safaitic and Nabatean names, one calls himself an Iturean. Possibly Magnus (also most popular in Hauran in the Greek transcription Μάγνος) and Maximus were given as augural names corresponding to the common Arabian name Kabir (KBR, 'to be big'), for which see Negev 1991: 34, no. 550, and references cited there.
20. E.g. in the synagogue of Hammat Tiberias (Dothan 1983: 54-60), in the Jewish cemetery at Beth She'arim (Schwabe and Lifshitz 1974: 81, nos. 101-102), in the Greek Samaritan dedications on Mt. Gerizim (Schneider 1949-1951: 228-231), in the Samaritan synagogue at Tell Qasile (Tsafrir 1981; cf. Macuch 1985), and in a Jewish or Samaritan epitaph from Arsuf (Germer-Durand 1892: 247-248, no. X). Another Maximus, probably of Jewish extraction, appears in Hauran (Savignac and Abel 1905: 606, no. 24). On the diffusion of this name among the

Diaspora Jews, cf. Roth-Gerson 1987: 66, n. 3. Two men called Μαξιμών, a Greek transcription of the Aramaic variant of Maximus, are mentioned in inscriptions of the first half of the fifth century in the church at 'Evron, belonging to a village community that shows clear signs of a Jewish or Samaritan ancestry: Tzaferis 1987: 40*, no. 3; 44*, no. 7.

21. A Εἰορτάσι(ο)ς is mentioned among the notables in the synagogue of Hammat Tiberias (Dothan 1983: 54-60, fig.10); Ἑορτάσιος appears in a Jewish epitaph at Caesarea (Lifshitz 1967a: 55, no. 8).
22. *CTh* 6, 28, 1, 3-6; 6, 29, 5, 8, 12; Valentinianus III, *Novella* XXVIII (449 C.E.). Cf. Gerontius, *Vita Melaniae Junioris* 52: 227-229, where a *curiosus* in charge of the *cursus publicus* in Tripolis (Lebanon) takes a *sportula* (really a bribe) of three gold coins in order to assign pack animals to a group of travellers who were not provided with the necessary imperial permit.
23. In the West, Jews and Samaritans had been excluded from this corps in 404, and the interdiction was repeated again in 418, with a provision allowing those already enrolled in the corps to complete their career: *CTh* 16, 8, 16, 24.
24. On the Christian belief in divine mysteries hidden in the alphabet, see St. Jerome's interpretation of Pachomius' *Verba mystica*: Ep.I-II: 87-88 (on *kappa* and *tau*, esp. col. 87); Ep. VI: 95-96; Ep. IX: 97-98; Ep. 11: 98-99; Jerome, *Epistula XXX ad Paulam*: 441-445; Eusebius, *Praeparatio evangelica* 10, 5: 574-575.
25. Pape and Benseler (1911: 1009) register Νικότυχος (cf. also *SEG* 27, no. 290), but Νικοταχος can hardly be considered a legitimate variant of it.
26. Photinus, bishop of Acco-Ptolemais, is mentioned in an inscription from the church of Shavei Zion, dated 485/6 (Avi-Yonah 1967: 59-60); he was the successor of Paul, who took part in the Council of Chalcedonia in 451: Le Quien 1740: 813-816.
27. Examples from Ascalon and Caesarea: *SEG* 1, no. 554; 8, no. 136.
28. A non-epigraphic occurrence from the Negev is on a papyrus from Nessana containing the Letter of Abgar: the abbreviation inscribed on the volume is XNMΓ, apparently Χ(ριστὸ)ν Μ(αρία) γ(εννᾷ): Casson and Hettich 1950: 145, no. 7.
29. See for example Cyr. Scyth., *Vita Sabae* 61: 163.
30. A similar uncomplimentary sobriquet, Βροντοδαίμων, 'thundering devil,' was given to John, an Origenist monk in the Great Laura of Sabas: Cyr. Scyth., *Vita Sabae* 84: 189.
31. On the holy place at Chorsia, see Tzaferis 1983. The site was visited by pilgrims in the late fifth century, and probably earlier: cf. Cyr. Scyth., *Vita Sabae* 24: 108.
32. Pape and Benseler 1911: 923. Several examples from Greece and the Aegean islands, Asia Minor, etc. can be found in the indexes of *SEG*.
33. Cf. *SEG* 19, no. 796. Kibyra is the name of several towns in Asia Minor.
34. Cf. *SEG* 19, nos. 343, 356, 578, etc.
35. A possible exception is the case of Theodosia, ἐνδοξοτάτη κουβικουλαρία, whose epitaph is preserved in Jerusalem (Clermont-Ganneau 1899: 337-340; Avi-Yonah 1932: 167, no. 116), but even if she had acquired the rank of *gloriosissima* through her office as lady-in-waiting at the imperial court, she must have been of senatorial birth and perhaps the wife of a senator. In any case, she lived in a much later period, and died under Mauritius in 592.
36. Jones 1964: 378-379, 529-532. *Illustres* enjoyed fiscal and jurisdictional privileges: they were exempt from extraordinary levies and *sordida munera*, were immune from curial duties and, if charged with crimes, they were subject only to the emperor's personal jurisdiction: *ibid.*, 452, 491, 536-542.
37. The *dux Palaestinae* is still called *spectabilis* in Justinian's *Novella* 103 (536 C.E.), but a short time later the post was held by men of *gloriosissimus* rank. At least, Cyril of Scythopolis, writing in the middle fifties of the sixth century, calls the duces Theodorus and Summus *gloriosissimi* (*Vita Sabae* 71, 72: 172, 175).
38. At Caesarea, ἐνδοξότατος στρατηλάτης καὶ ἀνθύπατος, late sixth century (Lifshitz, 1961: 121-122) and ἐνδοξότατος ἀνθύπατος, late sixth or early seventh century (Holum 1986); ἐνδοξότατος κόμης καὶ ὑπατικός from Mt. Gilboa near Beth Shean (Applebaum, Isaac and Landau 1978: 142); another ἐνδοξότατος, a governor of *Palaestina Secunda*, is mentioned in an undated inscription from Beth Shean (Lifshitz 1962: 81; Cumont 1913: 170-171, no. 144). In Transjordan, an ἐδοξότατος δούξ (of the Provincia Arabia) appears at Zizia (Gatier 1986, no.155). A man styled ἐδοξότατος ἰλλούστριος but bearing no title of office, is mentioned in a mosaic inscription at ed-Deir near Madaba: in the editor's opinion, he was a governor or *dux* (Gatier 1986, no.175), but in my opinion this is unlikely. An ἐνδοξότατος στρατηλάτης, probably a honorary *magister militum*, appears in a sixth-century inscription at Kafr Kama in Lower Galilee (Saarisalo and Palva 1964: 11-14). A court chief-physician and a former (or honorary) prefect, both *gloriosissimi*, are mentioned in inscriptions at Beersheva and Beth Shean (Abel 1909: 104-105; FitzGerald 1939: 13-14, no. 1). The Beth Shean inscription also mentions an ἰλλούστριος without title of office; another appears in an acclamation from Beersheva (Figueras 1985: 19, no.11). Senators and consuls were of course ἐνδοξότατοι and two are mentioned in inscriptions *in absentia* (Gatier 1986, no.100; *SEG* 8, nos. 34-35).

39. From the synagogue of Ascalon (*SEG* 8, no.266; Roth-Gerson 1987: 23, no.2); from the Samaritan enclosure on Mt. Gerizim (Schneider 1949-1951: 228-231). Another example is in No. 70, also containing an Aramaic name.
40. The *editio princeps* is the edition of Green and Tsafrir, not that of Meimaris, as mistakenly stated by J. and L. Robert.
41. On Eudocia the poetess: Ludwich 1882: 206-222; id. 1897: 24-114; Schreiber 1984: 180-181. On Eudocia the empress: Gregorovius 1892; Cameron 1982: 217-89; Holum 1984: 112-146; 175-225.
42. *Anthol. graeca* IX, 606-640, 814-815; XI, 243, 411; XVI, 280-281. A full commentary on Eudocia's poem is provided by the editors and there is no need to repeat it here.
43. Green and Tsafrir (1982: 87) believe that Repentinus was a donor whose name had been given to one of the halls. The name was borne by several rather obscure personages: Groag and Stein 1914; Martindale 1980: 940; it appears also in a first-century papyrus: Foraboschi 1971: 274. On the other hand, Repentinus might be the personification of a spring. In the Late Roman period, individual springs at Hammat Gader had their own names: Eros and Anteros are mentioned by Eunapius (*Vitae Sophistarum*: 459). A spring might be so called because it issued all of a sudden, or because it was subject to unexpected changes of flow.
44. Technically βριαρή can be an adjective referring to μονάστρια, but the sense does not fit: a *powerful* nun? Briareos was the name of a mythological hundred-handed giant, and accordingly Briara might be the name of a statue representing a giantess, or an exotic many-handed figure: perhaps another import from India?
45. There is no reason to doubt that the Matrona, the Nun and other colorful characters were actually represented by figures: for one thing, only two different representations of Indian women could justify the existence of two areas called by the same name. In my opinion, these representations did not refer so much to real persons or historical figures, as suggested by Green and Tsafrir, as to emblems: e.g., Elijah as a holy patron, Antoninus Pius as the personification of the just and caring emperor, etc.
46. Hammat Gader was well known to the rabbinic sources: Neubauer 1858: 34-38; Klein 1939: 45-47; Reeg 1989: 258-259. Epiphanius (*Haer.* 30, 7-8: 342-343) describes the visit of a patriarch's son to Hammat Gader.
47. Indeed, it is not even certain that Juvenal himself was ever called patriarch: the archbishop of Jerusalem came into this title at some time between 451 and 475, perhaps after Juvenal's death. Cf. Honigmann 1950: 271-275.
48. Ἥρως can be used in the sense of *divus*, said of a historical person to whom divine honors are paid, e.g., a deified emperor: cf. Dio Cassius LVI, 41, 9; vol. VII: 96.
49. On Anastasius' building activity, cf. Priscianus, *De laude Anastasii imperatoris*, 184-192: 264-274; Procopius of Gaza, *Panegyricus Anastasii imperatoris* vii, xii: 2805, 2820; Malalas, *Chron.*: 409.
50. 'Year of the colony' here means simply 'year of the city.' It is not certain if Gadara was indeed a colony during the late imperial period. The only evidence is a Latin epitaph from Byblos mentioning *col(onia) Valen(tia) Gadara* (*CIL* III, 181 = 6697); see Schürer 1979: 135, n. 252; Millar 1990: 55; however, the text should probably be corrected to Col(lina) Valen(s) Gadara, i.e., the dead man's tribe, cognomen and *domus* (B. Isaac, epistolary communication. In any event, the city era has nothing to do with the city's acquisition of colonial status.
51. A μειζοτέρα, chief of the female servants in a great house, appears in the Late Roman catacombs at Beth She'arim: Schwabe and Lifshitz 1974: 185-186, no. 200. By the Byzantine period the office of a house μειζότερος was more than a mere butler or steward: cf. Cyr. Scyth., *Vita Jo. Hesych.* 23: 218) and Robert and Robert 1964: 231-232, no. 503; 1974: 314, no. 641.
52. E.g., Florentius, governor in 385/6, in an inscription from the aqueduct of Caesarea (Hamburger 1959). Several others are mentioned in fourth-century inscriptions from Beth Shean, as yet unpublished: cf. Mazor 1987/88: 22; Foerster and Tsafrir 1987/88: 27, 33.
53. E.g., Flavius Demarchus, governor of *Palaestina Tertia* in 454/5 (Negev 1981: 73-76, no. 92 = *SEG* 31, no. 1401); Count Hesychius, civil governor of Arabia in 489/90 (Sartre 1982a, no. 9123, and cf. Sartre 1982b: 107-108); governors of *Palaestina Secunda* in 499/500, 521/2, 524/5, 525/6, 534/5 (*SEG* 8, nos. 34-35; Mazor 1987/88: 16, 17; Foerster and Tsafrir 1987/88: 41).
54. So does, for example, Sartre 1982b: 107-108.
55. Cf. Applebaum, Isaac and Landau 1978: 142; Mazor 1987/88: 14, 15, 17.
56. Cf. No. 49, v. 8.
57. Cf. No. 49, vv. 6-7.
58. It is noteworthy that Nos. 20 and 23, which according to their prominent location belong to the stage when the pavement was laid, mention marble workers, μαρμαράριοι, while Nos. 25 and 43, that appear to be an afterthought, mention stonecutters or engravers, γλύπται. Seemingly one must distinguish between the profession of μαρμαράριος, who, besides carving and engraving, also took part in the laying of pavements, and that of γλύπτης, who only engraved inscriptions on request, copying texts as they were presented to him (see commentaries to Nos. 7, 17, 22, 38). There was a vast difference in the

quality of their work too, if one is to judge from the four examples that occur in the baths complex: the inscriptions of the μαρμαράριοι are beautifully carved, while those of the γλύπται are faulty in language and slovenly in execution.

59. The material found by the excavators under the pavement does indicate that the fill was renovated, probably more than once, because the much-trodden stones tended to cave in. But apparently this was done bit by bit, and the original flagstones were put back in their place after each repair.

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CHAPTER 4

ARABIC INSCRIPTIONS, GRAFFITI AND GAMES

Nitzan Amitai-Preiss

INSCRIPTIONS AND GRAFFITI

Five inscriptions from the Umayyad period were revealed during the excavation at the site. Four of them were found in the Hall of Fountains (Area D). One of them is a Greek monumental inscription which was incised on a marble slab measuring 50×80 cm and was found *in situ* in the wall of the central semicircular alcove (L. 419) on the western side, 2.1 m above the floor. It commemorates renovations carried out in the *thermae* during the reign of Mu'awiya, the founder of the Umayyad dynasty (A.H. 41-60/661-680 C.E.), and was probably installed when the baths were reopened, according to the inscription, in A.H. 42/662-663 C.E. (see Chapter 3, Inscription 54).

The three other inscriptions discovered in the same hall are written in Arabic, and they are all of an engraved, graffiti type.[1]

Inscription No. 1

The first one to be discussed here is actually a group of graffiti that was found on the floor of the same alcove (L. 419), below Mu'awiya's monumental inscription (Fig. 1). We assume that a new



Fig. 1. Graffiti on floor of alcove with Arabic inscriptions.

floor was laid in this alcove in the early Arab period. The present floor, containing the group of graffiti, is composed of three different types of stones: most are limestone slabs, along with a few marble slabs and small basalt stones. The graffiti were engraved on eight different stones; two other slabs might possibly bear graffiti, but their state of preservation precludes any definite conclusions. The number of engravers is not known and it is not clear whether they incised their words at the same time. However, all chose to engrave only on the limestone slabs.[2] Two words indicate very early writing (lines 4, 6 on Stone VI); most of the words in the inscriptions appear to be from 'Abd al-Malik's time, and one word, "the praiseworthy" (*al-hamid*, line 3 on Stone II), seems to date from somewhat later than the beginning of the eighth century. Thus we have a range of engravings spanning the years A.H. 60-160. All the limestone slabs found in the alcove were broken as a result of the collapse of the walls which surrounded them: "The nature of the collapse indicates a total caving-in of the walls directly onto the floor of the hall" (Hirschfeld and Solar 1981:204).

Traces of older inscriptions are visible; they are recognized by the different depths of their incision.

The following inscriptions will appear with two sets of numbers: the Roman numeral at the top is the number of the stone (starting from right to left in accordance with the reading of the Arabic text); Arabic numerals on the side refer to the line numbers. This applies both to the original Arabic inscription and to the English translation. It seems that most of these texts are only parts of inscriptions (Fig. 2). One is thus led to the conclusion that the stones were placed here after they had been inscribed elsewhere. It seems unlikely that the stones were brought and installed



Fig. 2. Floor of alcove, detail of some of the inscriptions.

here without inscriptions, and only later were engraved, since so many of them are only partially inscribed. One word, *Dimashq*, is worthy of additional comment. It is inscribed on two stones thusly: *dima-shq*. However, these two elements were not inscribed at the same time. The *dāl* and *mīm* are deeper than the *shīn* and *qāf*; the *dāl* appears to have been attached to a previous letter, and the *mīm* is followed by a horizontal line. This horizontal line, when taken together with the following letter, is too long to constitute a normal-sized *shīn*. It is conceivable that the two elements of the word are actually two different words that coincidentally appear here to be one.

Arabic Text

	I	II	III	IV
1	.....	اللهم اغفر	لمحـ[مد]	....
2	.....	الله		....
3		الحميد	[عبد ا] لله عبد	
4		[هذه ؟] الحمام	الملك امر	على
5	....	بو و	المؤ [منن]	
6		مـ		
7			دمسشق	ع ...

	V	VI
1	حمـ محمد....	...
2	.... م ... د	
3	بن	
4	... ا .... سكى به	الله
5	هو....	
6	قسح / هسح (؟)	الله [upside down]

	VII	VIII
1	بسم الله	
2	اللهم	
3	صلى على	محمد

Translation

	I	II	III	IV
1	....	Allah, pardon to	Muḥa[mmad]	....
2	....	Allah		
3		the praiseworthy	['Abd] Allah 'Abd	....
4		[these] baths	al-Malīk Amīr	by
5	....	Abū w[name]	al-mu[minīn]	
6		(the letters) *mim* and [?]		
7		Dimasshq	(the letter) *'ayn*...	

	V	VI
1	*ḥa*, *mim* and [?] Muḥammad....	....
2	....final *mim* ....(the letter) *dal*	
3	b.	
4	....*alīf* ....Sakī/Shakī by it	Allah
5	(The letters) *ha* and *waw*	
6	4-letter word	Allah (upside down)

	VII	VIII
1	In the name of Allah	
2	O Allah	
3	pray for	Muḥammad

Stone I

May have borne graffiti that are now illegible.

Stone II

Line 1: The letter *hā'* of *Allahumā* is a strange one resembling a sort of *mīm*.
Line 2: The word Allah is written in small script.
Line 3: The term *al-ḥamīd*. The *ḥa* has a straight tail.
Line 4: [*Hadhihi* ?] *al-ḥimām*
Line 5: [..]*bu w*[...]
Line 7: *Dimas*.

The script of these letters is more deeply incised then the other words engraved on this stone. The word "Dimas" seems to be the beginning of a word whose end is located on Stone III. Thus, the final letters were apparently added to Stone III only in order to complete the word found on Stone II, when they were placed next to one another.

Stone III

This stone is broken and only its left part has survived.

Line 3: *lillāh*.
Line 4: Al-Malīk appears to be part of the name of the caliph 'Abd al-Malīk (A.H. 65-86/685-705 C.E).
Line 7: The word that appears to be Damascus (Dimashq) is divided between two different stones.[3] The engraver began to write the letter *shin* on Stone II, as can be seen immediately after the letters *dāl* and *mīm* (Fig. 2), but it would appear that for lack of space he completed the *shīn* on the next stone, following it with *qaf*. The mention of Damascus may have pointed to the place of origin of the engraver of this particular graffito. From the Greek inscriptions at Hammat Gader it is known that visitors came from all over the Near East to the site in order to be cured and enjoy themselves. One of the Greek inscriptions, from the fifth or sixth century (see Chapter 3), also mentions a person from Damascus.

The appearance of the name of the important caliph 'Abd al-Malīk here is noteworthy, since this certainly is not a monumental engraving. This caliph is mentioned in a few monumental inscriptions.[4]

Stone VI

Lines 4 and 6 feature two words: both may be Allah, the second written upside down. These two words are made up of letters formed by dots. This inscription can be dated from the end of the seventh century to the eighth century.

Stones VII and VIII

"In the name of Allah pray for Muḥammad." This has two parallels from Har Nafḥa (Sharon 1991:14, No. 12.III, L. 1; 24, No. 66.II). In all three examples the verb is written as *ṣallī* and not *ṣalli*, as it should have been in the imperative form. In the two parallels from the Negev, the verb *ṣalli* refers to the prophet Muhammad.

Inscription No. 2

This engraving contains only one word. It was recently discovered by the present author on the paving stone of the walkway in the northwestern corner of the Hall of Fountains (Fig. 3). It reads: سعادة, meaning "happiness, luck, fortune."

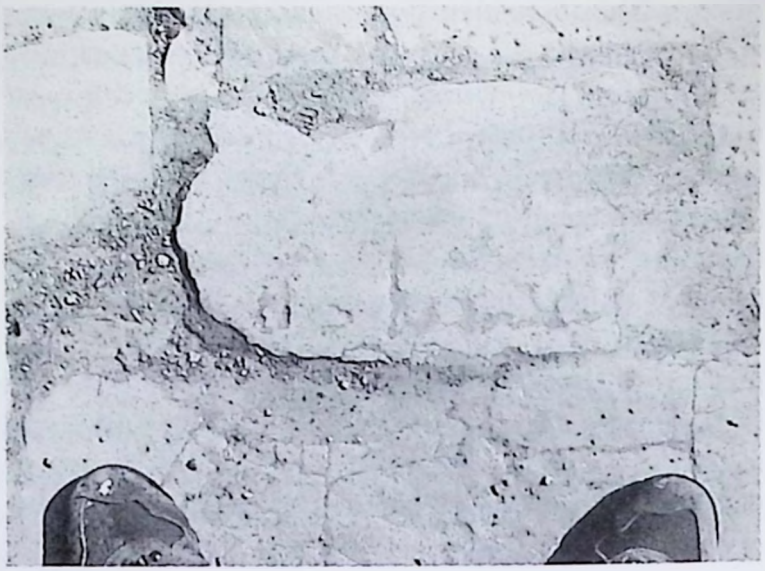


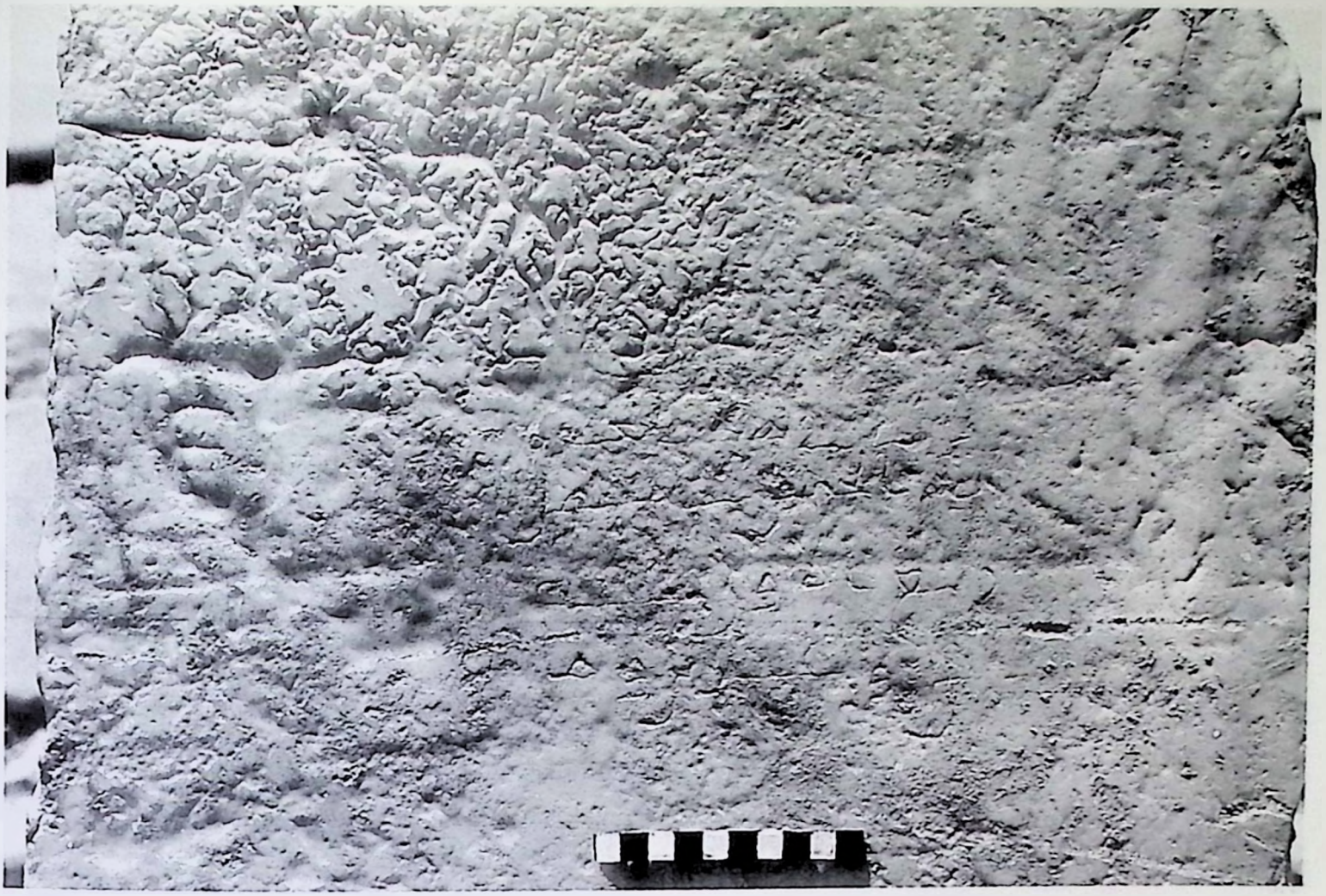
Fig. 3. A one-word inscription on a paving stone of the walkway in the northwestern corner of the Hall of Fountains.

Inscription No. 3

The third inscription was engraved on the top of the southernmost marble fountain (Fig. 4) on the eastern side of the Hall of Fountains. The Arabic inscription has five lines. Its maximum dimensions are ca. 14×20 cm (Fig. 5). The script is very thin.



Fig. 4. The fountain inscribed in Arabic.



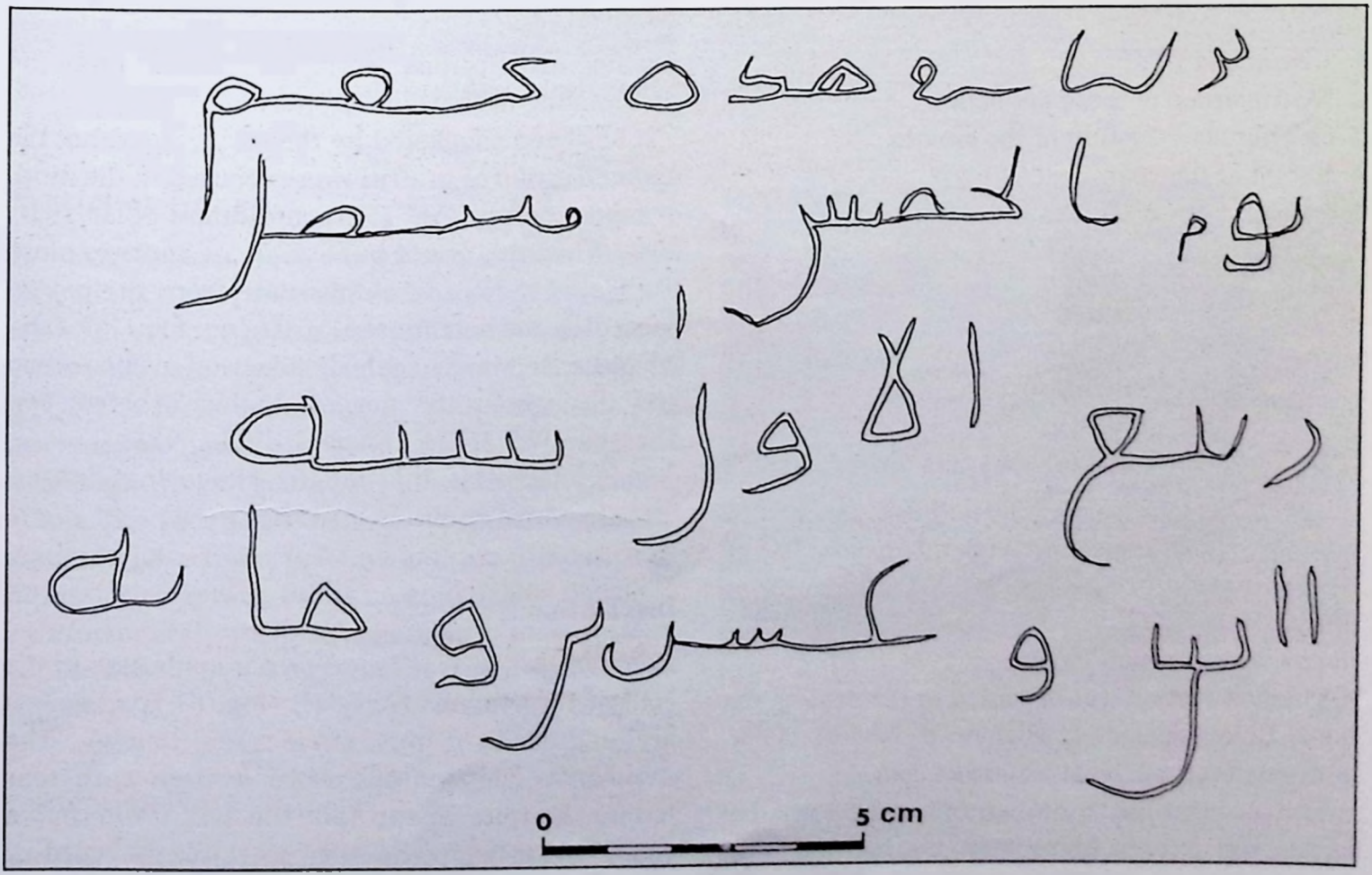


Fig. 5. Arabic inscription on top of fountain.

This inscription seems to have been written above a previous one, composed of larger and thicker letters. Four lines of the latter inscription are visible, but only part of it is legible but incomprehensible. Part of this first inscription looks as if the script is in relief, and part (the beginning of lines 2-3) is engraved.

First Inscription:

1 ...

2 حهد. هممع... سهم مط ؟

3 مو مب نو ى ؟

Second Inscription:

1 ....مب

2 نزلنا في هذه الحمم

3 يوم الخميس مستهل

4 ربيع الاول سنة

5 اثني و عشرين ومائة

Translation:

1 ... *mim* and [?]
2 We sojourned at these hot baths
3 on Thursday, the first of the month
4 Rabi' I of the year
5 two and twenty and a hundred [4 February, 740 C.E.].

Line 2: The plural form of the verb *nazalnā* could indicate that a group (of unknown provenance) arrived together at the site. We have read the word *ḥ-m-m* as *ḥimām*, which we understand to be a broken plural for *ḥamma*, "thermal bath." While this plural (or, for that matter, any other plural of this word) is not found in the dictionaries, a plural is indicated by the use of the feminine singular of the demonstrative pronoun (*hadhihi*). The broken plural form *fi'al* is possible, but not common, for nouns of the form *fa'la* (Wright 1986:1, 202).[5]

This inscription was executed in the days of the tenth Umayyad caliph, Hisham b. 'Abd al-Malīk, who ruled from A.H. 105-125/724-743 C.E.

The inscription reveals a few paleographical features which are uncommon, but not unknown, for this time. Firstly, the letter *lām* in *al-ḥimām* is located above the *ḥā'* (line 2) and likewise in *al-khamīs* (line 3) is located above the *khā'*; in most inscriptions from this period the *lām* is on the same line as the *ha'* (e.g., Sharon 1985: 94, No. 1). However, contemporary examples similar to the present inscription are known (Sharon 1981: 87, No. 1; Grohmann 1962: 43, No. Z25). Secondly, in this period the letter *'ayn* in the final position is usually open at the top. An inscription from A.H. 93/712 C.E. has both variations (Grohmann 1971: Table between pp. 72-73). The word *rabi'* in the present inscription has an *'ayn* closed with a circle at the top. But this phenomenon is also known from A.H. 117/738-739 C.E. (Sharon 1990: 21-22, No. 66.I) and A.H. 125/742-743 C.E. (Grohmann 1971: Table between pp. 72-73) Thirdly, and perhaps most characteristic, the *waw* at the beginning of *wa-mi'a* has an 'arrowhead' at the end of the leg of the letter. This is quite an early example of this phenomenon. The year A.H. 122 is clearly read at the end of the inscription.

An exact date, as recorded here, is not common in early Arabic inscriptions, either in those of a monumental nature or in graffiti. The present inscription is one of some 20 published dated Arabic inscriptions from Palestine and the surrounding area from that period.[6]

It has been suggested by the excavators that the undated group of graffiti was executed in the ninth or tenth century C.E. (Hirschfeld and Solar 1981: 204). While this is not impossible, it appears more likely that these engravings date from the period preceding the earthquake of 10 January, 749 C.E., which caused large-scale destruction in Jerusalem and throughout the Jordan Valley (Tsafrir and Foerster 1989:357; Karcz and Elad 1991).

It is interesting that all the above inscriptions were revealed in one hall (Area D).

Inscription No. 4

A fourth graffito was found on a marble slab in the Hall of Inscriptions (Area E) (Fig. 6). Two games are engraved in this stone (see below). The inscription contains one word written with four letters. In spite of the fact the last letter has a continuation below the line, we think the word is: الله, Allah.

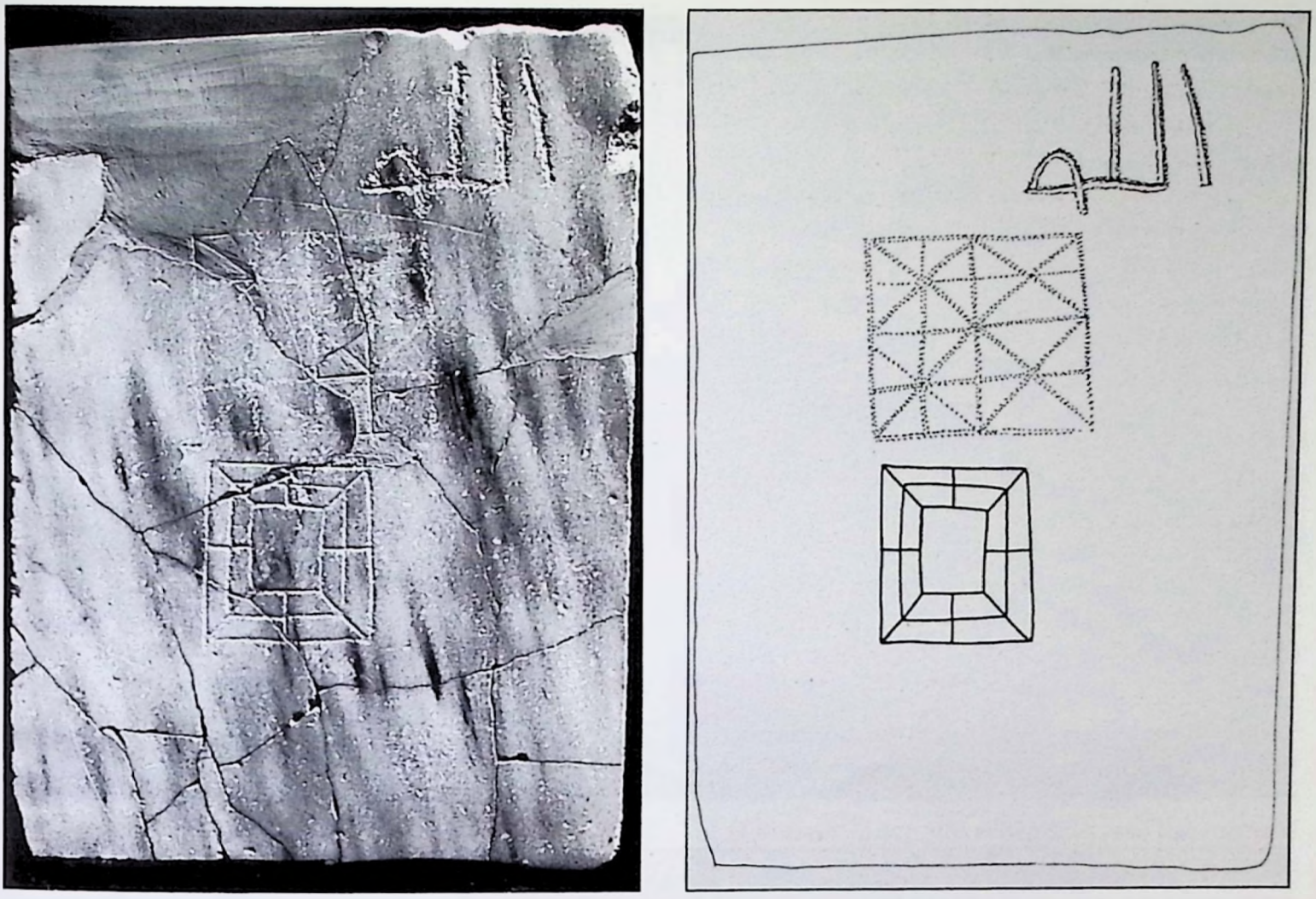


Fig. 6. Engraving of an unfinished word *alla*... above two board games.

Inscription No. 5

Two inscriptions were found on the same plaster wall, on the eastern face of the second pier from the north in W7. Only parts of them have been preserved, and the lower inscription in Fig. 7 appears to have contained 6-7 lines at least. The surviving portion is part of its center; the lines seem to be long. We can see traces of a decorative frame on top. The second inscription on the same plaster, containing 5-6 lines, is found at the continuation of the first inscription, but is written upside down.

Unfortunately, these inscriptions in their present state are illegible. They can be dated to the first century A.H.[7]



Fig. 7. Arabic inscription written on plastered wall.

Inscription No. 6

A marble slab bearing engravings of feet and hands was found *in situ* in the Hall of Inscriptions (Area E). The slab depicts two feet and two hands, which are arranged alternately (Fig. 8). All the engravings originally pointed toward the south. Traces of two Greek inscriptions are visible on the

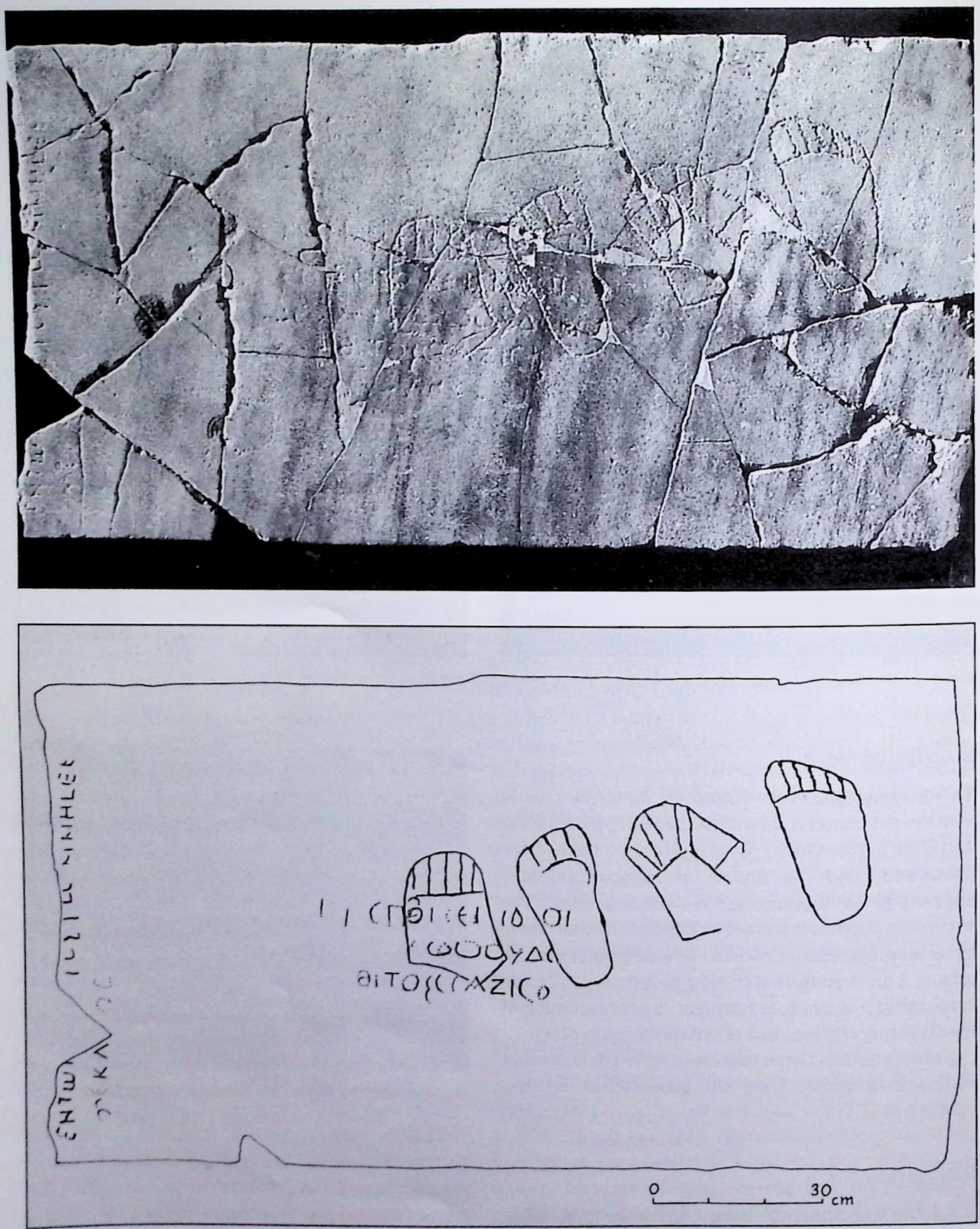


Fig. 8. Engraving of feet and hands.

slab. It is clear that the feet and hands postdate the central Greek inscription since they are cut through its letters (see Chapter 3, Inscription 5).

The slab measurements are 84×154 cm. The sizes of the engravings of the feet are: left foot 13×27.50 cm; right foot 13×28 cm. The right foot has six toes (see below). The dimensions of the hands are: left hand 16×24 cm; right hand 17×23 cm. These depictions are "free drawings" which were not traced from real feet and hands.

The Meaning of the Engravings

The mosaic floors in several Byzantine churches feature a motif of two sandals or shoes. These represent the idea of being in a holy place. One example is from a church in Beersheba (Avi Yonah 1934:67, No. 335, Pl. V/1). Another is on a mosaic floor from the Church of the Virgin at Madaba, on the floor in front of the *bema*, on the left side, within two concentric circles flanked by four waterfowl (Piccirillo 1989:56-57). This reflects the biblical verse connected with Moses and the burning bush: "Do not come near; put off your shoes from off your feet, for the place on which you are standing is holy ground" (Exodus 3:5).

On the slab from Hammat Gader, there is a depiction of feet as well as two hands. This would appear to signify a holy place for Muslims. According to Islamic law, every Muslim who attains his majority has to pray five times a day. He need not go to a mosque but may perform the prayers (*ṣalāt*) in a dwelling or any other place (*Shorter Encyclopedia of Islam* 1974:493, s.v. *ṣalāt*). The place of prayer has to be marked off from the surrounding area by a *sutra*, which is the "covering, shelter or protection at the *ṣalāt*, meaning the object the worshipper places in front of him or in the direction of the *qibla*, the imaginary area within which he is not disturbed by human or demoniacal influences" (*ibid.*, 555, s.v. *sutra*). The worshipper should, of course, face Mecca; in Arabic, the direction of prayer is called *qibla*.

As stated above, the original position of the slab had the hands and feet pointing to the south. This would be in the direction of Mecca. It is thus possible that this slab served as an indication of the correct direction to be adopted by Muslims when they prayed within the precincts of the *thermae*.

The *ṣalāt* consists of several stages, one of which is the *rukū'* (kneeling), which is performed by bending down to the ground, so that the palms of the hands and the knees both touch the ground (*ibid.*, 493, s.v. *ṣalāt*). It is possible that this stage of the *ṣalāt* is depicted on the slab in question. If this is the case, it would seem that the present drawing is a condensed portrayal of the *rukū'*, with the hands and feet placed on one line. Moreover, the full feet are portrayed, and not only their front part, which is what actually touches the ground when the worshipper is in this kneeling position.

It appears that these engravings were executed in the Umayyad or 'Abbāsid period. There is another representation of feet, from the same period, in the Negev. This drawing was found together with a drawing of a building and a group of Arabic inscriptions from the eighth century C.E. This portrayal of feet is possibly connected with praying (Sharon 1991:9-20).

Did the worshipper who engraved these hands and feet do so because he thought this specific place was truly holy ? In addition, the Greek inscriptions at Hammat Gader site repeatedly use the formula "this holy place." This formula appears in the Greek inscription below the left foot and hand. The *thermae* with their therapeutical qualities appear to have attained a degree of holiness.

There is another possible explanation for these hands and feet. They may reflect the old pagan custom of presenting votive legs, symbolizing the legs of Serapis, as a thanks offered for being cured. In several Roman amphitheaters in Spain, especially in Tarraco, Augusta Emerita, Colonia Patricia and Italica, as well as in other parts of the Roman empire, there was an area at the main entrance that was dedicated to the cult of Nemesis. To this same area were brought gifts, sometimes stone slabs with imprints of feet, in some cases with a few pairs of feet on each slab. It is assumed these were donated by gladiators and magistrates in order to obtain good luck when beginning and completing a task (Canto 1984:193).[8] Another well-known foot connected with healing appears on a coin from the third century C.E., struck in Akko-Ptolemais during the reign of Philip (244-247 C.E.) This coin features a large human foot and a caduceus with a thunderbolt above. The foot

symbolizes the god Serapis. The caduceus symbolizes healing, and the journey of the souls to the underworld (Meshorer 1985:13, 15).

The right foot and the left hand depicted on the slab from Hammat Gader have six digits. This calls for a brief examination of the phenomenon of six fingers or toes (polydactylism). It is not uncommon and is an inherited genetic abnormality, especially in closely-interbred communities. It is less visible today, as cosmetic surgery is usually performed at birth in Western countries. The appearance of polydactylism in ancient art and archaeology is not widespread. Barnett (1986-87:5-6) recorded ten cases, all of a divine or semi-divine nature, which cover a wide chronological and geographical range. It is also recorded in the Bible with regard to the *refa* (plural: *refa'im*) "giant," who had six fingers on each hand and six toes on each foot. This *refa*, was killed by one of the nephews of David (II Samuel 21:20-21, as cited in Barnett 1990:46).[9]

Polydactylism is often recorded among humans as well, but the evidence is not chronologically continuous. The earliest example is on a painted mummy cloth from Alexandria in the Hellenistic period, showing a woman with six toes on each foot (Barnett 1986: 9, Pl. 2). Some of the slabs from the above-mentioned amphitheaters in Roman Spain show six-toed feet, the meaning for which is not known; this may have been regarded as a good luck omen (Canto 1984:193, n. 45).

ENGRAVINGS OF GAMES

During the excavations three different board games were revealed. Two were found in the Hall of Inscriptions (Area E) and the third in the Hall of Fountains (Area D). They all seem to have been located on the pavement which served as a public area of entertainment during the visit to the baths.

No. 1. One game is a sort of "Mankala" which is played in the way one would sow seeds in the ground (Tepper 1986:432). The game was found on the top of the southernmost fountain of the western row in the Hall of Fountains (Fig. 9). (The height of the fountain is ca. 60 cm.) The game is carved in three parallel rows, each of which is made up of 14



Fig. 9. Engraving of game, three rows of holes.

holes. The two players probably sat opposite each other with the rows of holes extending lengthwise between them. Because of the height of the fountain, it would appear that they sat on chairs. It is not certain how this game was played. But, a similar arrangement of three rows of holes or squares is known from the Egyptian *Senet* game depicted in the tomb of the nobleman Hasira (dated 2600 B.C.E.). The game appears in Egypt until 300 C.E., and was found in noblemen's tombs as well as on floors of temples, where it was played by laborers working at the sites. In the *Senet* game there are ten holes in each of the three rows. Notwithstanding the difference in the number of holes, it is possible that the *Senet* game and the game under discussion were played in a similar fashion (Sebbane 1990:18-19; 1991: 233).

In the *Senet* game, each player has five or seven pieces, which he has to move as quickly as possible from the start to the finishing point. The player who succeeds in removing all his pieces first is the winner. The extent of a move is determined by four throwing sticks, each with one side colored. One can move 1-4 holes at a time, depending on how many of the throwing sticks fall with their colored side up. Each player moves his pieces from the top left square/hole on the far side of the board to the right bottom square/hole (Sebbane 1989:18-19). At Hammat Gader two game pieces were found which could have been used in this game or others revealed in the same hall (see Chapter 12, Nos. 7 and 8). Dice made of pebbles, dried animal droppings or small sticks are used today by the

Bedouins of the Negev and Sinai, and by the villagers in Egypt, who still play the game (Sebbane 1991:233, and n. 7, Figs. 2-3). One of the "sowing games" cited above (from Western Galilee) may date from as early as the Hellenistic period (Tepper 1986:434).

In Egypt, the *Senet* game stopped being played at the end of the Roman period. This may have been the result of the Christianization of Egypt, since the game had pagan religious connotations (Sebbane 1990:237 and n. 27). Although the game may have been proscribed by the Christians, it has been found among Muslims (see above). It may thus be assumed that this game at Hammat Gader post-dates the Byzantine period, and it may have been engraved at the same time as the other two games.

The second and third games were found on a marble slab in the Hall of Inscriptions (Area E). The dimensions of the slab are 61.5×85.5 cm (see above, Fig. 6).

No. 2. The lower game is engraved as a rectangle surrounded by two other rectangles. Four diagonal lines link the corresponding corners of the rectangles, and vertical and horizontal lines bisect their sides. All these lines end at the edges of the innermost rectangle. The outermost rectangle measures 15×18.5 cm.

Part of a board, similar to this one, was found at Nessana. It is not clear whether it belongs to the fifth-seventh centuries C.E. or to the Hellenistic-Roman period, which is also represented at the site (Kirk 1938:229, [I]).

It is not certain how the game was played, but it appears to be an ancient version of what is nowadays called "twelve-men's morris." The board of the latter is composed of three squares, one within the other, and the game is played by two people. Each player has twelve counters; one set is white, the other black. The players alternately place their counters until all are on the board; then they take turns to move a counter along a line to a neighboring empty intersection. When a "mill" (three in a row) is formed, an opposing counter is removed but it may not be taken from an opposing "mill." If a player is reduced to two counters or is blocked and unable to move, he has lost the game (Bell and Cornelius 1988:8-9).

No. 3. Another game is engraved on the same slab above Game no. 2 and is composed of four rows of four squares each. Its dimensions are 20×22 cm. Each of the squares is cut by a diagonal line. It is not clear how this game was played, but it may be assumed – by comparing it to board games played today – that the counters were moved from one point to another. This would seem to be a game of the "draughts" type, variants of which are played today. Bell and Cornelius (1988:41) write that the earliest game in this family appears to be *Alquerque*, "which probably dates back to 1400 BC in the Middle East." This game moved westward, reaching Spain via the Muslims, where its rules were recorded in 1250 C.E. (ibid.) According to these rules, which are incomplete, *Alquerque* is played by two players; each has twelve counters (black or white) and makes alternate moves from the original arrangement. The moves are along the lines, to an adjacent intersection point. One captures (and removes) one's opponent's counters by jumping over them; more than one counter can be captured in a single move. This game, of course, is quite similar to modern draughts or checkers.

It is hard to determine whether the word *allah* inscribed in the top right corner of this slab was executed by the same person who engraved either of the games, since each of the three engravings is carved to a different depth.

No. 4. Another board game was found on a flagstone of the western walkway of the central part of Area D. In the center are two squares, each divided into four equilateral triangles; on each side of the squares are six double rows of engravings, each ending in a semicircle toward the center (Fig. 10). We have not found a parallel for this game, and it is not clear how it was played.



Fig.10. Engraving of board game.

NOTES

1. I would like to thank Prof. M. Sharon for his useful remarks.
2. The engravings are briefly mentioned in Hirschfeld and Solar 1981:204; and see Pl. 31 A.
3. The second part of this word may be a continuation of the phrase "'Abd Allah 'Abd al-Malik [*amīr al-mu'minīn*]." But the last word of this reading is doubtful.
4. Four milestones bearing the name of 'Abd al-Malik were found in Palestine, showing the attention he paid to the roads of this province (Grohmann 1971:83 Nos. a-d). Another inscription from 'Abd al-Malik's time commemorates the inauguration of a road which was constructed in an *'aqaba*, a difficult ascent or mountain pass (Sharon 1966:369).
5. Cf. the identical plural for nouns of the *fi'al* form derived from the *verbum mediae rad geminatae*, as in *qiṣṣa/qiṣāṣ* and *ḥimma/ḥimām*.
6. For monumental inscriptions, see Grohmann 1971: 79-90; for dated graffiti-type inscriptions, see Sharon 1991:No. 14 (A.H. 119), No. 22 (A.H. 117).
7. For other inscriptions on plaster, see M. Sharon; forthcoming chapter in a monograph of the synagogue of Susiya in *'Atiqot*. I wish to thank both the author and the excavator, Dr. Z. Yeivin, for their willingness to share this unpublished information.
8. I wish to thank L. Di Segni for the information and reference.
9. I wish to thank J. Zias of the Israel Antiquities Authority for this reference.

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CHAPTER 5

ROMAN AND BYZANTINE COINS

Rachel Barkay

The excavation of the baths at Hammat Gader revealed a complex of the Roman period, which was in continuous use until the early Islamic period. This site is one of the most well-known therapeutic *thermae* of the ancient world. The excavation was divided into ten areas marked A-J, and it yielded 2875 coins of the Roman and Byzantine periods.[1]

The coins were damaged due to the activity of mineral salts and the high humidity, and most of them were badly corroded. The bad state of preservation prevented identification of many of those coins. Naturally, the most severely damaged were the smallest coins, mainly the nummi of the Byzantine period, which were found in large quantities.

The coins which were completely corroded have not been fully catalogued, but are mentioned and included in the statistics in Table I.

CATALOGUE OF COINS IN THEIR ARCHAEOLOGICAL CONTEXT

The catalogue is organized according to the excavated areas (from A to J), within each area according to the loci, and within each locus in chronological order. The photographs are organized in the same order.

AREA A: THE OVAL HALL

This area yielded seven badly corroded coins.

Locus 105 is the northeast alcove, under the late floor covering the pool. This locus yielded four Byzantine Folles and one Half Follis. Below the upper basalt floor and above the floor of the pool is *Locus 106*, yielding one corroded medium bronze coin.

Surface find from this area is a large corroded bronze coin – possibly a medallion.

AREA B: THE PASSAGE ROOMS

Locus 211 – Most of the coins of this area are from the floor level of the western room which was covered with slabs of limestone.

No. 1: Diocletian (284-305 C.E.).
Obv.: Bust of Diocletian to right, radiate and draped.
Around from lower left: IMP.DIOCLE-TIANUS AUG.
Rev.: Hercules standing, looking to left, holding club in right hand and trophy in left.
Around from lower left: VIRTUS AVGG.
In exergue: XXI[-]
AE, Antoninianus, ↓, 2.52 g, 20-23 mm. Pl. I:1.

No. 2: Constantius II (337-361 C.E.). Date of issue: 347-348 C.E.
Obv.: Head of Constantius II to right, pearl-diademed.
Around: [D.N. CONSTANTIUS P.F. AUG]
Rev.: Within laurel wreath in four lines : VOT/ XX/MULT/XXX
In exergue: SMANT (minted in Antioch).
AE, ↓, 0.72 g, 12-13.5 mm. Pl. I:2.
(Kent 1981:521, No. 114)

No. 3: Constantius II (337-361 C.E.).
Obv.: Bust of Constantius to right, diademed and draped.
Around from lower left: D.N. CONST [AN-TIUS P.F. AUG].
Rev.: Helmeted soldier to left, spearing falling horseman.

Around from lower left: [FEL. TEMP. REPARATIO]
In exergue: [C]ON (minted in Constantinople).
AE, ↑, 1.8 g, 17 mm.
(Kent 1981:460, No. 137)

No. 4: As No. 3.
AE, ↓, 1.62 g, 17 mm.

No. 5: As No. 3.
AE, →, 2.34 g, 16 mm.

No. 6: As No. 3.
AE, ↖, 1.74 g, 18-19 mm.

No. 7: Constantius II (337-361 C.E.).
Obv.: Bust of Constantius II to right, pearl-diademed, draped.
Around from lower left: [D.N. CONSTAN]TIUS P.F. A[UG]
Rev.: Helmeted soldier to left, shield on left arm, spearing fallen horseman.
Around from lower left: FEL.TEMP. REPARATIO
In exergue: mint – illegible.
AE, ↘, 2.14 g, 16 mm.

No. 8: As No. 3. Very corroded.
AE, ↖, 16 mm.

No. 9: As No. 3.
AE, ↑, 2.42 g, 15 mm.

No. 10: As No. 3.
AE, ↖, 1.18 g, 13.5-14 mm.

No. 11: As No. 3.
AE, ↖, 1.42 g, 16-17 mm.

No. 12: Constantius Gallus (351-354 C.E.).
Obv.: Bust of Constantius Gallus to right, bare-headed, draped and cuirassed.
Around from lower left: D.N. [FL.CL. CONSTANTIVS No.]B.CAE[S]
Rev.: Helmeted soldier to left, spearing falling horseman.
Around from lower left: [FEL.TEMP. REPAR]ATIO
In exergue: mint name off flan.
AE, ↓, 2.26 g, 18-20 mm. Pl. I:3
(Kent 1981:497, No. 99)

No. 13: Valentinian I (364-375 C.E.).
Obv.: Bust of Valentinian I to right, pearl-diademed, draped and cuirassed.
Around from lower left: D.N. VALENTI [NIANUS P.F. AUG.]
Rev.: Valentinian advancing right, dragging captive and holding labarum.
Around from lower left: GLORIA [ROMANORUM]
Mint name illegible.
AE, ↑, 1.64 g, 15-16 mm. Pl. I:4.
(Pearce 1951:299, No. 4[a])

No. 14: Arcadius (383-408 C.E.).
Obv.: Bust of Arcadius to right, pearl-diademed, draped.
Around from lower left: D.N. ARCA [DIUS P.]F. AUG.
Rev.: Victory advancing left, carrying trophy on shoulder and dragging captive. In field left: ...P
Around from lower left: [SALUS RI] PUBLICAE
Mint name illegible.
AE, ↑, 1.23 g, 11 mm. Pl. I:5.
(Pearce 1951:188, No. 65c)

No. 15: Theodosius II (402-450 C.E.).
Obv.: Bust of Theodosius II to right, pearl-diademed, draped and cuirassed.
Around from lower left: D.N.[TEO]DO-S[IUS.P.F.AUG]
Rev.: Arcadius, Honorius and Theodosius II, standing side by side. Around from lower left: [GLORI-AROMA-NORUM]
AE, ↓, 1.4 g, 15 mm.

No. 16: Anastasius I (491-518 C.E.).
Obv.: Bust of Anastasius I to right, diademed, cuirassed and with paludamentum.
Around from lower left: [D.N. AN]AST [A-SIUS.P.P.AUG]
Rev.: Large M; above: cross (very corroded).
AE, Follis, ↓, 11.74 g, 32-33 mm.
(Bellinger 1966:12-13, Nos. 16a.1-17.2)

No. 17: Justinian I (527-565 C.E.). Date of issue: 558/9 C.E.
Obv.: Bust of Justinian I facing, in helmet with plume and diadem and cuirass; in right hand

globus cruciger; on left shoulder, shield with horseman device; in field right: cross.
Around from lower left: [D.N. IU]STINI-ANUS.P.P.AUG

Rev.: Large M; above: cross. To left downward: ANNO; to right downward: XXXII (558/9 C.E.); beneath: Є.
In exergue: CON (minted in Constantinople).

AE, Follis, ↓, 14.84 g, 31-32 mm. Pl. I:6.
(Bellinger 1966:94, No. 55d)

No. 18: Justinian I (527-565 C.E.).

Obv.: Bust of Justinian I to right, in helmet with plume and diadem, cuirass and paludamentum.
Around from lower left: [D.N. IU]STIN [I-ANUS.P.P.AUG]

Rev.: Large M; above: cross; to left: star.
In exergue: C[ON] (minted in Constantinople).

AE, Follis, ↙, 14.48 g, 28 mm (very corroded).
(Bellinger 1966:78-81, Nos. 28-32)

No. 19: Justin II (565-578 C.E.). Date of issue: 571/2 C.E.

Obv.: Justin and Sophia nimbated facing on double throne, holding between them globe surmounted by large cross and long scepters in their hands.
Blundered inscription.

Rev.: Large M; above: cross; to left downward: ANNO; to right downward: ϟ.II (571/2 C.E.); beneath: Γ .
In exergue: THEϟPO (minted in Antioch).

AE, Follis, ↓, 11.9 g, 29-30 mm.
(Bellinger 1966:243-244, Nos. 152c.1-152c.4)

No. 20: Justin II (565-578 C.E.).

Obv.: Justin on left and Sophia on right, seated nimbated on double lyre-backed throne; he is holding globus cruciger in right hand; she is holding cruciform scepter.
Around from lower left: D.N. IUST[I]-NUS .P.P.[AUG]

Rev.: Large M; above: cross; to left downward: ANNO; to right: illegible date; beneath: Є.
In exergue: CON (minted in Constantinople).

AE, Follis, ↓, 12.32 g, 29-30 mm.
(e.g. Bellinger 1966:204, No. 22a.1)

No. 21: Unidentified ruler (fourth-fifth centuries C.E.).

Obv.: Bust of emperor to right, pearl-diademed, draped and cuirassed. Around legend illegible.

Rev.: Victory advancing left, head to right, carrying trophy on shoulder and dragging captive.
Around from lower left: [S]ALUS REI-PUBLICAE

AE, ↓, 1 g, 10-12 mm. Pl. I:7.
(e.g. Pearce 1951:188, No. 65)

Locus 203 is between two floors of the western room. The coins from this locus are very corroded. The periods represented are Byzantine and Arabic. The finds included five Byzantine Folles, two medium bronzes, three small bronzes and eight unidentified coins.

The number of coins from Area B is 837, the earliest from the time of Diocletian (284-305 C.E.) and the latest from the time of Justin II (565-578 C.E.).

AREA C: THE HALL OF PIERS

Locus 313 – The main pool is below the fifth-century floor, dated according to inscriptions.

No. 22: Hostilian (251 C.E.). City-coin of Caesarea.

Obv.: Bust of Hostilian to right, radiate, wearing paludamentum and cuirassed.
Around legend illegible.
[HOSTILIANOQUINTOS]

Rev.: Bust of Tyche, wearing turreted crown and chiton.
Around illegible: [COLPFAUFC-CAESMETR] (minted in Caesarea).

AE, →, 3.99 g, 27 mm.
(Hill 1914:38, No. 196, Pl. IV, No. 14)

No. 23: Constantius II (337-361 C.E.). Date of issue: 346-361 C.E. (Post-Reform).

Obv.: Bust of Constantius II to left, pearl-diademed, draped and cuirassed, holding globe; border of dots.
Around from lower left: D.N. CONSTANTIUS [P.F. AUG]

Rev.: Constantius II standing to left, holding labarum, two captives at his feet; border of dots.
Around from left below: FEL TEMP REPARATIO
In exergue: SMNB (minted in Nicomedia).
AE, ↓, 4.92 g, 21.5-22.5 mm. Pl. I:8.
(Kent 1981:476, No. 67)

No. 24: Valentinian II (375-392 C.E.).
Obv.: Bust of Valentinian II to right, pearl-diademed, draped and cuirassed.
Around from lower left: D.N. VALENTINI[ANUS] P.F. A[UG]
Rev.: Victory advancing left, holding in right hand a wreath and in left a palm.
Around from lower left: SECURITAS REIPUBLICAE
In exergue: ALEΓ (minted in Alexandria).
AE, ↘, 2.40 g, 18 mm. Pl. I:9.
(Pearce 1951:298, No. 3[a])

No. 25: Marcian (450-457 C.E.).
Obv.: Head of Marcian to right.
Rev.: Monogram: 
AE, Nummus, ↑, 1.15 g, 10-11 mm. Pl. I:10.
(Fläming 1961:9, No. 5; 29, No. 5)

No. 26: Anastasius I (491-518 C.E.). Date of issue: 491-498 C.E.
Obv.: Bust of Anastasius I to right, diademed.
Around legend illegible.
Rev.: Within wreath, monogram: 
AE, Nummus, ↑, 1.26 g, 9-10 mm. Pl. I:11.
(Bellinger 1966:11-12, Nos. 15.1-15.8. Fläming 1961:9, No. 14; 29 Nos. 14-15)

No. 27: As No. 26.
AE, Nummus, 1.08 g, 9-10 mm.

No. 28: As No. 26(?).
Rev.: Within wreath, monogram: 
AE, Nummus, 0.90 g, 9.5 mm. Pl. I:12.

No. 29: Justin I (518-527 C.E.).
Obv.: Head of emperor to right, diademed.
Rev.: Within circle, monogram: 
AE, Nummus, 0.50 g, 8.5 mm. Pl. I:13.
(e.g. Bellinger 1966:45-46, Nos. 21-22. Hamburger 1956:120, No. 116)

No. 30: Justinian I(?) (527-565 C.E.).
Obv.: Head of emperor to right, diademed.
Rev.: Monogram: 
AE, Nummus, 0.40 g, 11.5-12 mm. Pl. I:14.
(e.g. Bellinger 1966:191, No. 368.1)

No. 31: Justin II (565-578 C.E.). Date of issue: 574/5 C.E.
Obv.: Justin and Sophia facing, enthroned.
Around from lower left: [D.N. IUSTI-NUS].P.P.AUG.
Rev.: Large M; above: cross; to left, downward: ANNO; to right: X (574/5 C.E.); beneath: B.
In exergue: NIKO (minted in Nicomedia).
AE, Follis, ↑, 12.36 g, 28-30 mm. Pl. I:15.
(Bellinger 1966:230, Nos. 100d.1-100d.6)

No. 32: Unidentified ruler (fifth-sixth centuries C.E.).
AE, Nummus, ↓, 1.02 g, 10 mm.

No. 33: Unidentified ruler (fifth-sixth centuries C.E.).
Obv.: Head of emperor to right, diademed.
Rev.: Monogram: 
AE, Nummus, 0.30 g, 8-8.5 mm.
(Hamburger 1956:120, No. 117)

In addition to these 12 coins, 73 Late Roman coins (fourth-fifth centuries C.E.), 521 nummi (of the fifth-sixth centuries C.E.) and seven Byzantine folles were found in these loci. Altogether 613 coins were found, mixed. The dominant numismatic find from the pool is the Byzantine nummi of the fifth-sixth centuries C.E. One Roman period city-coin was found, and a fair quantity of coins dated to the fourth century C.E. The latest coins are from the last quarter of the sixth century.

Locus 305 – The northern bathtub in the western row of piers (W6).

No. 34: Diocletian (284-305 C.E.).
Obv.: Head of Diocletian to right, bearded and radiate.
Around from lower left: IMP.C.C.VAL. DIOCLETIANUS.P.F.AUG.
Rev.: Within laurel wreath, in three lines: VOT/XX/B Border of dots.
AE, ↓, 1.89 g, 18-19 mm. Pl. I:16.

No. 35: As No. 3. Valentinian I (364-375 C.E.).
AE, ↑, 1.49 g, 16 mm.

No. 36: As No. 3.
AE, ↓, 1.66 g, 15-16 mm.

No. 37: Valentinian I (364-375 C.E.) or Valens (364-378 C.E.).
Obv.: Bust of emperor to right, pearl- diademed, draped and cuirassed. Around legend illegible.
Rev.: Victory advancing left, holding wreath in right hand, and palm in left.
Around from lower left: SECURITAS[REIPUBLIC]AE
In exergue: ANT△ (minted in Antioch).
AE, ↖, 1.44 g, 15 mm. Pl. I:17.
(Pearce 1951:275, No. 12b)

No. 38: Valens (364-378 C.E.).
Obv.: Bust of Valens to right, pearl-diademed, draped, and cuirassed. Around from lower left: [D.N.VALENS]P.F.AUG.
Rev.: Valens advancing right, with right hand dragging captive, and holding labarum in left.
Around from lower left: [GLORIA ROMANORUM]
In exergue: ANT△ (minted in Antioch).
AE, ↓, 1.63 g, 14 mm. Pl. I:18.
(Pearce 1951:274, No. 10[b])

No. 39: Justin II (565-578 C.E.). Date of issue: 568/9 C.E.
Obv.: Justin on left and Sophia on right, seated nimbated on double lyre-backed throne; he is holding globus cruciger in right hand; she is holding cruciform scepter.
Around from lower left: D.N.IUST[I]-NUS.P.P.A[UG]
Rev.: Large M; above: cross. To left downward: ANNO; to right downward: II II (568/9 C.E.); beneath: B.
In exergue: CON (minted in Constantinople).
AE, Follis, ↓, 11.8 g, 30 mm. Pl. I:19.
(Bellinger 1966:206, Nos. 25b.1-25b.2)

No. 40: Justin II (565-578 C.E.). Date of issue: 569/70 C.E.
Obv.: Justin and Sophia facing, enthroned.
Around from lower left: D[N.IUST[I]N [US.P.P.AUG]
Rev.: Large M; above: cross; to left downward: ANNO; to right: ϛ (569/70 C.E.); beneath: A.
In exergue: NIKO (minted in Nicomedia).
AE, Follis, ↓, 10.73 g, 27.5-30 mm.
(Bellinger 1966:227. Nos. 95a.1-95a.2)

No. 41: Justin II (565-578 C.E.). Date of issue: 569/70 C.E.
Obv.: Justin and Sophia facing, enthroned.
Around from lower left: [D.N.IUSTIN] US.P.P.AU.
Rev.: Large K; above: cross; to left downward: ANNO; to right: ϛ (569/70 C.E.).
In exergue: TЄ (minted in Thessalonica).
AE, Half Follis (20 Nummi), ↓, 6.32 g, 17-18 mm. Pl. II:20.
(Bellinger 1966:222, No. 63.3)

No. 42: Justin II (565-578 C.E.). Date of issue: 574/5 C.E.
Obv.: Justin and Sophia nimbated facing on double throne; they are holding between them globe surmounted by large cross and long scepters in their hands. Blundered inscription.
Rev.: Large M; above: cross; to left downward: ANNO; to right: X
(574/5 C.E.); beneath: Γ.
In exergue: ƆHЄ[UP/] (minted in Antioch).
AE, Follis, ↓, 11.1 g, 29-30 mm. Pl. II:21.
(Bellinger 1966:245, Nos. 157a.1-157a.2)

No. 43: As No. 42.
AE, Follis, ↓, 9.9 g, 28-30.5 mm.

The above-mentioned bathtub yielded 130 coins, mainly from the fourth to sixth centuries. The earliest is from the third century, and the latest dates from 574/5 C.E. In addition to the ten recorded above, this locus yielded 55 Late Roman-Early Byzantine coins (fifth-sixth centuries), 63 Byzantine nummi (fifth-sixth centuries) and two Byzantine folles. The medium bronzes and the nummi were very corroded, most of them broken and unidentifiable.

Locus 324 – The central bathtub in the western row of piers (above the *opus sectile* floor). All the coins

found in this locus were Islamic, apart from one unidentifiable Byzantine nummus.

Locus 325 – The central bathtub (under the *opus sectile* floor). Five bronze coins of the fourth-fifth centuries and four Byzantine coins were found here. Only one coin was in a reasonable state of preservation which made identification possible:

No. 44: As No. 5 or 15, Constantius II (323-361 C.E.) or Constantius Gallus (351-354 C.E.).
AE, ↘, 2.06 g, 14.5-15 mm.

Locus 320 – The southern bathtub – above the cement layer.

No. 45: Heraclius (610-641 C.E.). Date of issue: 626/7 C.E.
Obv.: Three figures standing, each wearing chlamys and crown with cross, and holding globus cruciger in right.
Rev.: Large M; above: cross; to left downward: [A]NNO; to right: X∢I (626/7 C.E.); in exergue: [C]ON (minted in Constantinople).
AE, Follis, ↙, 5.57 g, 25-26 mm. Pl. II:22.
(Grierson 1968:294, No. 101d)

Locus 321 – The southern bathtub – under the cement layer. Six coins of the fourth-fifth century and two coins of the Umayyad period were found here, mixed in the same context. Only one coin was in a reasonable state of preservation which made identification possible:

No. 46: As No. 26, Anastasius I (491-518 C.E.). Date of issue: 491-498 C.E.
AE, Nummus, ↘, 0.72 g, 8.5-9 mm. Pl. II:23.

As the latest find from this locus is Umayyad (seventh century), it gives a *terminus ante quem* date for the cement layer. Above the cement layer there was rich Umayyad material.

Locus 302 – The area north of the columned portal.

No. 47: Elagabal (218-222 C.E.). Date of issue: 218 C.E. City-coin of Gadara.
Obv.: Bust of Elagabal to right, radiate and draped.
Around from lower left traces of: [AVKMAUPANTWNINOC]
Rev.: The Three Graces.
legend: to right upward: [PEWN], to left downward: [KCUP]
above: AΠC (281-218 C.E.), in exergue: ΓAΛAP.
AE, ↑, 6.6 g, 22-24 mm. Pl. II:24.
(Meshorer 1981:No. 1331)

No. 48: Constantine the Great (306-337 C.E.).
Obv.: Head of Constantine I to right, laureate.
Around from lower left: [CONSTAN-T] INUS P.F. AUG.
Rev.: Sol radiate, standing to left, chlamys across left shoulder, raising right hand, globe in left; at feet, kneeling barbarian.
Around from lower left: CLARITAS [REIPUBLICAE]
AE, ↑, 0.62 g, 17 mm. (Broken and very corroded).
(Bruun 1966:500, No. 8)

No. 49: Justin II (565-578 C.E.). Date of issue: 568/9 C.E.
Obv.: Justin and Sophia seated nimbated on double lyre-backed throne. He is holding globus cruciger in his right hand; she is holding cruciform scepter. Legend: illegible.
Rev.: Large K; above: cross; to left downward: ANNO; to right downward: II II (568/9 C.E.); beneath: A.
AE, Half Follis, ↓, 6.3 g, 20-21 mm.
(Bellinger 1966:214, No. 47)

No. 50: Justin II (565-578 C.E.). Date of issue: 572/3 C.E.
Obv.: Justin and Sophia seated nimbated on double lyre-backed throne; he is holding globus cruciger in his right hand; she is holding cruciform scepter.
Around from lower left: [D.N.IUSTI]-NUS.P.P.A[UG]
Rev.: Large M; above: cross; to left downward: ANNO; to right downward: ∢II (572/3 C.E.); beneath: B.
In exergue: CON (minted in Constantinople).
AE, Follis, ↑, 10.08 g, 27-28 mm. Pl. II:25.
(Bellinger 1966:209, No. 34b)

No. 51: Justin II (565-578 C.E.).

Obv.: Justin and Sophia nimbated facing on double throne; they are holding globe surmounted by large cross between them and long scepters in their hands. Blundered inscription.
Rev.: Large M; above: cross; to left downward: ANNO; to right: illegible date; beneath Γ.
In exergue: |ƆIHE4P[O] (minted in Antioch).
AE, Follis, ↓, 9.64 g, 26-28 mm.
(Bellinger 1966:243-245, Nos. 150-160)

No. 52: Pocas (602-610 C.E.). Date of issue: 602-608 C.E.
Obv.: Bust of Pocas to right, crudely designed, diademed, in cuirass and paludamentum.
Around from lower left blundered inscription: D.N.[- - -]IUI[- -]
Rev.: Large IB separated by cross.
In exergue: AΛEΞ (minted in Alexandria).
AE, Dodecanummium, ↘, 1.96 g, 13-14 mm. Pl. II:26.
(Grierson 1968:192, No. 106.1)

No. 53: Byzantine period (sixth century C.E.).
Obv.: Totally corroded.
Rev.: Large I, to left, downward: ANNO; to right: I.
In exergue: T Є S (minted in Thessalonica).
AE, Decanummium, 2.62 g, 13.5-15 mm. Pl. II:27.

No. 54: Maurice (582-602 C.E.). Date of issue: 582/3 C.E.
Obv.: Completely corroded.
Rev.: Large K; above: cross; to left downward: ANNO; to right: I.
In exergue: T Ɛ S (minted in Thessalonica).
AE, Half Follis, 4.2 g, 18.5 mm. Pl. II:28.
(Bellinger 1966:320, Nos. 70-72)

Loci 302, 304 – In addition to the coins recorded above, this area yielded three Islamic coins mixed with the fourth-fifth centuries material, and 15 Byzantine nummi. Coin No. 47 is a city-coin of Gadara minted under Elagabal. It is much earlier then the rest of the coins in its context.

Locus 310 – The western cell in the northern part of Area C.

No. 55: Justin II (565-578 C.E.). Date of issue: 576/7 C.E.
Obv.: Justin and Sophia facing, enthroned.
Cross between heads.
Around from lower left, legend illegible: [D.N.IUSTINUS P.P.AUG]
Rev.: Large M; above: cross; to left downward: ANNO; to right downward: X II (576/7 C.E.); beneath: A.
In exergue: KY[Z] (minted in Cyzicus).
AE, Follis ,↓, 9.26 g, 27-29 mm. Pl. II:29.
(Bellinger 1966:237, Nos. 125a.1-125a.2)

Ninety coins were found in Locus 310: five from the fourth-fifth centuries, 84 Byzantine nummi (fifth-sixth centuries), and one sixth-century follis.

Locus 311 – The material from this locus comes from above the marble pavement. Most of the coins were Arabic, and with the Arabic material there were two Byzantine folles and three Byzantine nummi, all badly preserved.

Locus 314 – Below the white marble floor of Locus 311, five very corroded, medium bronzes from the fourth century were found. Two better preserved Roman coins are described below. This locus also yielded a small hoard of seven Byzantine folles of Constantinople (see below, nos. 58-64). The homogeneous hoard includes one coin of Anastasius I (491-518 C.E.), and six of Justin I (518-527 C.E.).

No. 56: Julia Mamaea (mother of Severus Alexander) (222-235 C.E.). City-coin of Bostra.
Obv.: Bust of Julia Mamaea to right, draped.
Around from lower left: IULIAMAMA [EAAUGUSTA]
Rev.: Bust of Zeus-Ammon to right.
Around from lower left: COLONIA BOSTRA
AE, ↓, 4.64 g, 18-20 mm. Casted coin. Pl. II:30.
(Kindler 1983:120, No. 42, Pl. III, No. 42)

No. 57: Fourth century C.E.
Obv.: Bust of emperor to right, pearl-diademed and draped, legend off flan.
Rev.: Two soldiers standing on either side of a standard.
Around from lower left: [GLORIA] EXER[CITUS]
AE, ↘, 1.68 g, 13 mm.

No. 58: Anastasius I (491-518 C.E.). Date of issue: 498-518 C.E.
Obv.: Bust of Anastasius I to right, diademed, cuirassed and with paludamentum.
Around from lower left: [D.N. AN]AST [A-SIUS.P.P.AUG]
Rev.: Large M; above: cross.
In exergue: CON (minted in Constantinople).
AE, Follis ,↓, 10.12 g, 24-24.5 mm. Pl. II:31.
(Bellinger 1966:12-13, Nos. 16a.1-16a.2)

No. 59: Justin I (518-527 C.E.).
Obv.: Bust of Justin I to right, with diadem, cuirass and paludamentum.
Around from lower left: D.N.IUST[I]-NUS P.P.[AUG]
Rev.: Large M; above: cross; to left and right: stars; beneath: A.
In exergue: CON (minted in Constantinople).
AE, Follis ,↑, 15.7 g, 28-29 mm. Pl. III:32.
(Bellinger 1966:39, Nos. 8a.1-8a.5)

No. 60: As No. 59.
Rev.: Beneath: B.
AE, Follis ,↑, 15.74 g, 31-33 mm. Pl. III:33.
(Bellinger 1966:40, Nos. 9b.1-9b.3)

No. 61: As No. 59.
Rev.: Beneath: Γ .
AE, Follis ,↓, 13.76 g, 28-29 mm. Pl. III:34.
(Bellinger 1966:41, Nos. 9c.1-9c.3)

No. 62: As No. 59.
AE, Follis ,↑, 15.44 g, 31 mm. Pl. III:35.

No. 63: As No. 59.
Rev.: Beneath: Є .
AE, Follis ,↓, 14.76 g, 32 mm. Pl. III:36.
(Bellinger 1966: 40, Nos. 8e.1-5)

No. 64: As No. 59.
AE, Follis ,↓, 15.42 g, 29 mm. Pl. III:37.

Locus 315 – Under the stone pavement of Locus 312. The numismatic material here was purely Byzantine; most of the coins are nummi. This area yielded 151 nummi and 10 larger bronzes, all corroded. Only two coins from this locus were better preserved:

No. 65: Justin I (518-527 C.E.).
Obv.: Bust of Justin I to right, with diadem, cuirass and paludamentum.
Around from lower left: [D.N.IUSTI-NUS P.P.AUG.]
Rev.: Large M; above: cross; to left and right: crosses; beneath: A.
In exergue: NI[K]M (minted in Nicomedia).
AE, Follis ,↓, 15.28 g, 31-33 mm. Pl. III:38.
(Bellinger 1966:49, No. 33a)

No. 66: Justin II (565-578 C.E.). Date of issue: 568/9 C.E.
Obv.: Justin and Sophia facing, enthroned.
Around from lower left: [D.N.IUSTI]-NUS P.P.AUG.
Rev.: Large M; above: cross; to left, downward: ANNO; to right downward: II II (568/9 C.E.); beneath: A.
In exergue: NIKO (minted in Nicomedia).
AE, Follis ,↓, 9.04 g, 29.5-31 mm. Pl. III:39.
(Bellinger 1966:227, Nos. 94a.1-4)

Locus 306 – Above the floor of the hall, to the south of the columned portal.When the floor was cleaned it yielded five corroded Byzantine nummi.

Locus 300 yielded three badly corroded Byzantine coins: one follis, one half follis, and one nummus.

Locus 308 – A podium northwest of the columned portal. On the *opus sectile* floor 89 corroded Byzantine nummi were found, and below the floor four corroded nummi. In *Locus 322* there were nine unidentified coins.

Locus 313 – Under the stairs, near the columned portal.

No. 67: As No. 16. Anastasius I. Date of issue: 498-518 C.E.
AE, Follis ,↓, 5.44 g, 24-25 mm.
(Bellinger 1966:12-13, Nos. 16a.1-17)

The excavators dated the baths complex to the second century C.E. The earliest coins from Area C (our coins Nos. 22, 34, 46) are from the third century C.E., when the building was already in use.

AREA D: THE HALL OF FOUNTAINS

Several dedicatory inscriptions were found here, the earliest one embedded in the floor facing the entrance from the Oval Hall (Area A). This inscription mentions Empress Eudocia (mid-fifth century C.E.). The inscription was probably set in the floor somewhat later than the original construction of the *thermae*.

Locus 403 is the southwestern corner of the hall above the floor of the walkway. This locus yielded three Byzantine coins.

No. 68: Justin II (565-578 C.E.).
Obv.: Bust of Justin and Sophia, facing, crowned. Illegible legend.
Rev.: Large K; the rest completely corroded.
AE, Half Follis ,↑, 4.74 g, 24 mm.

No. 69: Phocas (602-610 C.E.). Date of issue: 603-610 C.E.
Obv.: Bust facing, wearing consular robes and crown with cross. In right hand: mappa; in left: cross. Illegible legend.
Rev.: Large XX, above: star.
In exergue: CONA (minted in Constantinople).
AE, Half Follis ,↓, 4.82 g, 22-23 mm.
(Grierson 1968:168, No. 37a.1)

No. 70: Heraclius (610-641 C.E.). Date of issue: 620 C.E.
Obv.: On coin of Justinian(?), circular countermark: to left, bust of Heraclius facing, with short beard, wearing cuirass, paludamentum and crown with cross.
To right: monogram:  .
Rev.: Large M (very corroded).
AE, Follis, 13.96 g, 28-30 mm.
(Grierson 1968:354, No. 241d.4)

Locus 420 is a rectangular alcove between Areas A and D, above the cement floor.

No. 71: As No. 43. Justin II. Date of issue: 574/7 C.E.
AE, Follis, ↓, 11.18 g, 27-30 mm.

AREA E: THE HALL OF INSCRIPTIONS

A large pool apparently occupied half of the area of the hall. This pool, unlike the others, was lined with dark gray plaster. At a later stage the pool was sealed and covered with a marble and limestone floor, incorporating Greek dedicatory inscriptions.

Locus 516 – The early pool, lined with dark gray plaster:

No. 72: Marcus Aurelius and Lucius Verus (161-169 C.E.). City-coin of Aelia-Capitolina.
Obv.: Confronted busts of Marcus Aurelius (left) and Lucius Verus (right) laureate. Legend illegible: [IMP.CAES.ANTONINO ET.VERO.AUG]
Rev.: Within temple showing four columns, with pediment and central arch, Tyche standing to left, wearing turreted crown, short chiton, parazonium at side, right foot raised on uncertain object, resting with left on sceptre, holding in right hand small human bust.
In exergue: COL AEL CAP
AE, ↑, 13.24 g, 27-29 mm.
(Kadman 1956:90-91, Nos. 54-55, Pl. V, Nos. 54-55. Meshorer 1989:80, No. 52)

No. 73: Elagabal (218-222 C.E.). City-coin of Capitolias.
Obv.: Bust of Elagabal to right, laureate and draped.
Around from lower left traces of: [AVKMA]-AN[TWNINOC]
Rev.: Temple with eight columns, broad architrave and pediment; in center – Zeus seated to left; right hand extended, left is resting on sceptre. Illegible legend; in exergue: [KAΠ]ITW
AE, ↑, 13.30 g, 25.5-26.5 mm. Pl. IV:40.
(Spijkerman 1978:104, No. 24, Pl. 21, No. 24)

No. 74: Severus Alexander (222-235 C.E.). City-coin of Bostra.
Obv.: Bust of Severus Alexander to right, laureate and draped.
Around from lower left:[IMP CAES M AVR SEVE ALEXANDER PF AVG]
Rev.: Bust of Zeus-Ammon to right, bearded,

draped and with ram's horn. Legend: COLONIA BOSTRA.
AE, ↓, 3.62 g, 18-18.5 mm. Pl. IV:41.
(Kindler 1983:119, No. 38)

No. 75: Julia Mamaea (mother of Severus Alexander) (222-235 C.E.). City-coin of Bostra.
Obv.: Bust of Julia Mamaea to right, draped, hair waved and taken up at neck, wearing stephane.
Legend: around from lower left: [IVLIA MAMAEA AUGUSTA]
Rev.: Bust of Zeus-Ammon to right, bearded, draped and with ram's horn. Legend: around from lower left: COLONIA [BOSTRA]
AE, ↓, 4.22 g, 18.5-20 mm. Casted coin. Pl. IV:42.
(Kindler 1983:120,No. 42, Pl. IV, No. 42)

No. 76: As No. 75
AE, ↓, 1.94 g, (broken), 16 mm. Casted coin.

No. 77: Philip Senior (244-249 C.E.). City-coin of Neapolis.
Obv.: Bust of Philip to right, radiate and draped.
Legend: around from lower left: [IMP CM IVL PHILIPPVS AVG]
Rev.: Mount Gerizim, surrounded by wreath, supported by eagle.
Legend: [COL SERG].
In exergue: [NEAPOL]
AE, ↓, 10.26 g, 24-25 mm.
(Rosenberger 1977:17, No. 75)

No. 78: Trajan Decius (249-251 C.E.). City-coin of Caesarea.
Obv.: Bust of Decius to right, radiate and draped.
Legend: around from lower left: [IMPCCMESQTRAIANVSDECIVSAVG]
Rev.: Roma Nikophora seated to left on throne.
Legend: [COL PRI F AVG CAES METRO]
AE, ↑, 8.74 g, 25-26 mm. Very corroded.
(Kadman 1957:126-127, No. 145, Pl. XII, No. 145)

No. 79: Volusian (251-253 C.E.). City-coin of Neapolis.
Obv.: Bust of Volusian to right, laureate and draped.
Legend: around from lower left: [AVTKAIC OVITPEBOVOΛOVCIAN]
Rev.: Mount Gerizim supported by eagle standing with outspread wings. Legend: ϕΛNEAC[ΠOΛEWC]
AE, ↓, 8.52 g, 23.5-24 mm. Pl. IV:43.
(Rosenberger 1977:25, No. 125)

No. 80: Justin II (565-578 C.E.). Date of issue: 568/9 C.E.
Obv.: Justin on left and Sophia on right, seated nimbated on double lyre-backed throne; he is holding globus cruciger in right hand; she is holding cruciform scepter.
Around from lower left: D.N.IUSTINUS.P.P.A[UG]
Rev.: Large M; above: cross; to left downward: ANNO; to right downward: II II (568/9 C.E.); beneath: △.
In exergue: CON (minted in Constantinople).
AE, Follis, ↓, 11.0 g, 28 mm. Pl. IV:44.
(Bellinger 1966:206, No. 25d)

No. 81: Justin II (565-578 C.E.). Date of issue: 571/2 C.E.
Obv.: Justin and Sophia nimbated facing on double throne; they are holding globe surmounted by large cross between them and long scepters in their hands. Blundered inscription.
Rev.: Large M; to left downward: [AN]NO; to right: ϟ [II] (571/2 C.E.). In exergue: ƧHEϟPO. (minted in Antioch).
AE, Follis, ↓, 12.13 g, 30 mm.
(Bellinger 1966:243, No. 152C.1)

No. 82: Justin II (565-578 C.E.). Date of issue: 571/2 C.E.
Obv.: Justin and Sophia nimbated facing on double throne; they are holding globe surmounted by large cross between them and long scepters in their hands.
Blundered inscription.
Rev.: Large M; to left downward: ANNO; to right: I Ɔ (mirror image script of ϟ. I – 571/2 C.E.); beneath: Γ.
In exergue: [Ƨ]HEϟPO. (minted in Antioch).
AE, Follis, 11.34 g, 30 mm.
(Bellinger 1966:244, No. 153)

This locus reflects the early stage of the pool when it was plastered – predating the floor of marble and limestone slabs.

In addition to the coins listed above, 139 other coins were found in this locus. Five of them are from the Roman period, 80 from the fourth-fifth centuries, 49 are Byzantine nummi, and five are Byzantine folles. The Byzantine coins give the *terminus ante quem* of the construction of the marble floor below which they were found. *Locus 522*, which is a continuation of Locus 516, yielded five unidentifiable coins.

Locus 500 – The second stage of the pool, above the marble floor. Five Byzantine folles were found, all from the time of Justin II.

No. 83: Justin II (565-578 C.E.). Date of issue: 567/8 C.E.
Obv.: Justin on left and Sophia on right, seated nimbated, on double lyre-backed throne; he is holding globus cruciger in right hand, she is holding cruciform scepter.
Legend around from lower left: DN. IUSTI-NUS P.P.A[UG]
Rev.: Large M; to left downward: ANNO; to right: III (567/8 C.E.); beneath: Є; in exergue: CON (minted in Constantinople).
AE, Follis, ↙, 13.28 g, 29-30 mm.
(Bellinger 1966:206, No. 24)

No. 84: Justin II (565-578 C.E.). Date of issue: 572/3 C.E.
Obv.: Justin and Sophia nimbated facing on double throne; they are holding globe surmounted by large cross between them, and long scepters in their hands. Blundered inscription.
Rev.: Large M; to left downward: ANNO; to right downward: ϟII (572/3 C.E.); beneath: Γ.
In exergue: .HEϟPO' (minted in Antioch).
AE, Follis,↓, 10.84 g, 28-30 mm.
(Bellinger 1966:244, Nos. 155b.1-3)

No. 85: Justin II (565-578 C.E.). Date of issue: 573/4 C.E.
Obv.: Justin and Sophia facing, enthroned; cross between heads.
Rev.: Large M; to left downward: ANNO; to right downward: ϟIII (573/4 C.E.); beneath: A.
In exergue: KYZ (minted in Cyzicus).
AE, Follis,↑, 13.08 g, 27 mm.
(Bellinger 1966:236, No. 122a)

No. 86: Justin II (565-578 C.E.).
Obv.: Justin and Sophia facing, enthroned.
Rev.: Large M; to left downward: ANNO; to right illegible date.
In exergue: C[ON] (minted in Constantinople).
AE, Follis, ↓, 10.30 g, 26-28 mm (very corroded).

No. 87: As No. 86.
AE, Follis, ↙, 12.86 g, 27-29 mm.

Locus 519 is the continuation of Locus 503, east of the passage rooms (Area B); it yielded 16 unidentifiable Byzantine coins, two of which are folles.

Locus 508 – The northern apsidal room.

No. 88: As No. 86.
AE, Follis, ↙, 11.24 g, 29-30 mm.

Locus 513 – The bath in W7 yielded six Byzantine coins: five folles (four are catalogued below) and one medium bronze.

No. 89: Justin II (565-578 C.E.). Date of issue: 575/6 C.E.
Obv.: Justin on left and Sophia on right, seated nimbated, on double lyre-backed throne. He is holding globus cruciger in right hand, she is holding cruciform scepter.
Legend around from lower left: DN. IUSTI-NU.P.P.A[UG]
Rev.: Large M; above: ✠; to left downward: ANN[O]; to right downward: X I (575/6 C.E.); (lower part corroded).
In exergue: [CO]N (minted in Constantinople).
AE, Follis,↑, 12.9 g, 29 mm.
(Bellinger 1966:213, No. 41a-c)

No. 90: Tiberius (578-582 C.E.).
Obv.: Bust facing, wearing consular robes and crown with cross; in right hand: mappa; in left: scepter with eagle, surmounted by cross (very corroded).

Legend around from lower left: [ȯ mTIbCONS]TANTPPAU[I]

Rev.: Large m; to left downward: A[NNO] (the rest illegible).

AE, Follis,↓, 8.52 g, 29-30 mm.
(e.g. Grierson 1968:270, Nos. 10-11)

No. 91: Heraclius (610-641 C.E.).

Obv.: Three figures standing, each wearing chlamys and crown with cross, and holding globus cruciger in right hand.

Rev.: Corroded.

AE, 1.44 g, 15-17 mm.
(e.g. Grierson 1968:313, No. 150.2)

Locus 505 – Cleaning of the channel. This locus yielded one Byzantine follis and three nummi, all in a bad state of preservation.

Locus 521 – Under the covering beams of the canal. This locus yielded three badly preserved coins.

AREA F: THE SERVICE AREA

This area has an open court with two underground channels: one extending from the northeast toward the area of the spring, and the other crossing it diagonally.

Locus 613 – Sounding of the central drainage channel (opposite Area B). This channel probably drains into the Yarmuk.

No. 92: Justin II (565-578 C.E.). Date of issue: 569/70 C.E.

Obv.: Justin on left, and Sophia on right, seated nimbated on double lyre-backed throne. He is holding globus cruciger in right hand, she is holding cruciform scepter.
Legend around from lower left: DN. IUSTI-[NUS P.P.AUG].

Rev.: Large M; to left downward: ANNO; to left: ϛ. (569/70 C.E.); beneath: Γ.
In exergue: CON (minted in Constantinople).

AE, Follis,↓, 10.38 g, 25-26 mm. Pl. IV:45.
(Bellinger 1966:206, No. 26b)

Another 85 Byzantine coins were found in this locus, 70 of them nummi, seven medium bronzes and eight folles; all are very corroded.

Locus 621 – Drainage channel of Area B. This channel is connected to the main channel of Area F, which drains into the Yarmuk.

No. 93: Anastasius I (491-518 C.E.). Date of issue: second period: 498-518 C.E.

Obv.: Bust of Anastasius to right, with diadem, cuirass and paludamentum.
Legend around from lower left: DN.AN [ASTA-SIUS P.P.]AUC.

Rev.: Large M; above: cross; to left and right: stars; beneath: B.
In exergue: CON (minted in Constantinople).

AE, Follis, ↑, 10.52 g, 30-33 mm. Pl. IV:46.
(Bellinger 1966:15, Nos. 20b.1-6)

No. 94: Justinian I (527-565 C.E.). Date of issue: 533-537 C.E.

Obv.: Bust of Justinian to right, with diadem, cuirass and paludamentum.
Legend around from lower left: DN. IUSTINI-ANUS P.P.AUC.

Rev.: Large M; above: cross; to left and right: stars (beneath corroded).
In exergue: [+T]HEϛ[P+] (minted in Antioch).

AE, Follis, ↘, 10.18 g, 26.5 mm. Pl. IV:47.
(Bellinger 1966:138, class III, Nos. 210a-d)

No. 95: Justinian I(?) (527-565 C.E.). Date of issue: 556/7 C.E.

Obv.: Bust of Justinian to right, with diadem, cuirass and paludamentum. Illegible legend.

Rev.: Large I; above: cross; to left downward: ANNO; to right: $\overset{\times}{x}x$.

AE, Decanummium, →, 1.62 g, 13 mm. Pl. IV:48.

This locus also yielded two Byzantine folles and 92 nummi, badly preserved.

Locus 623 – Adjacent to the basalt pipe, near W60.

No. 96: Valens (364-378 C.E.).

Obv.: Bust of Valens to right, pearl-diademed, draped and cuirassed. Legend around from lower left: DN.VALEN-S P.F.AUG.

Rev.: Victory advancing to left, holding wreath in right hand and palm in left. Around from lower left: SECURITAS-REIPUBLICAE Illegible mint name.
AE, ↑, 1.8 g, 16-17 mm. Pl. IV:49.
(e.g. Pearce 1951:298, No. 3)

In addition to these coins, this locus also yielded two medium bronzes of the Late Roman-Early Byzantine period (fourth-fifth centuries C.E.).

Locus 625 – West of W29.

No. 97: Maurice (582-602 C.E.). Date of issue: 585/6 C.E.
Obv.: Bust of Maurice facing, in cloak and plumed helmet with cross, holding globus cruciger. Legend around from lower left: [Ò]NmAURICI-[TI]bER[PPAUG]
Rev.: Large K; above: corroded cross; to left downward: [ANNO]; to right: IIII (585/6 C.E.); beneath: A.
AE, Half follis, ↓, 3.92 g, 21 mm.
(Bellinger 1966:312, No. 49a)

This locus also yielded one badly preserved Byzantine follis.

Locus 630 – Sounding west of the mosaic floor.

No. 98: As No. 42. Justin II (565-578 C.E.). Date of issue: 574/5 C.E.
AE, Follis, ↓, 11.66 g, 30 mm.

In addition to the coins recorded above, Area F yielded 21 corroded coins, listed in the table below.

The coins from Area F amount to 213 (including three unidentified ones from Locus 111).

AREA G: THE HALL OF THE HOT SPRING

The hot spring is the heart of the baths complex at Hammat Gader.

This area yielded seven coins, amoung them the one and only gold coin from this excavation. The other six coins are in a bad state of preservation:

Locus 702 – Above the walkway around the oval pool.

No. 99: Heraclius (610-641 C.E.). Date of issue: 636 C.E.
Obv.: Facing figures of Heraclius (in center), Heraclius Constantine (on right) and Heraclonas (on left), each wearing a chlamys and holding in right hand a globus cruciger. Heraclius and his elder son, Heraclius Constantine, are crowned, but Heraclonas wears only plain cap. In field left above: cross. No legend.

Locus	*Description*	*Amount*	*Period*
AREA F			
605	Drainage channel	1 Follis	Byzantine
615	Rectangular bathtub (below 601)	6 Nummi	"
607	Apsidal bathtub (below 601)	1	?
616	Southern niche in W29	5	Byzantine
618	Northern niche in W29	1	Early Byz.
632	A trench between 625 and 627	3 Nummi	Byzantine
?		4	Early Byz.
AREA G			
702	Walkway around the oval pool	1	?
704	Floor level of the oval pool	3	?
726	The round pool	1	?
730	Open trench east of the round pool	1 Follis	Byzantine

Rev.: Cross potent on three steps. In field left: monogram: ☧ ; in field right: θ ; in exergue: CONOB (minted in Constantinople). Legend on left and right: VICTORIA-AVGVS (distorted G and S).
AV, Solidus, ↙, 4.35 g, 22 mm. Pl. IV:50.
(e.g. Grierson 1968:259, No. 35b; 261 No. 42c)

AREA H: THE ENTRANCE CORRIDOR

Locus 800 – Most of the coins were found in trenches near the walls, while the latter were being cleaned, and under the street pavement. The total sum of coins from this locus is 111; 30 of them are medium bronzes of the Late Roman-Early Byzantine period (fourth-fifth centuries); 81 are Byzantine nummi. All the coins were very badly corroded and unidentifiable.

Locus 803 – Above the basalt floor of the entrance corridor. The numismatic material from this locus is mixed; most of the coins are Islamic, and only a few are earlier. There is one city-coin from the Roman period and few Byzantine coins, all in a bad state of preservation.

Amount	Period and denomination
1	Roman city-coin
17	Byzantine Nummi
2	Byzantine Folles
13	unidentifiable
32	Total

Locus 804 – The western shop.

No. 100: Constans or Constantius II (337-350 C.E. or 337-361 C.E.).
Obv.: Bust of emperor to right, diademed and draped. Around from lower left: CONS[TA---.P.F.]AUG.
Rev.: Two Victories facing one another, each holding wreath.
Around from lower left:
VICTORIAEDDAVGGQNN
AE, ↓, 1.04 g, 15-16.5 mm. Pl. IV:51.

This locus yielded another three bronze coins of the fourth-fifth centuries, and 13 corroded Byzantine nummi.

Locus 801 (adjacent to W40, south of the aqueduct). Only two coins were found here, one a medium bronze of the fourth-fifth centuries and the other a Byzantine nummus, both completely corroded.

Loci 802, 805 – Uncovering the street (and the area north of Locus 801). Locus 802 yielded 11 Byzantine coins in a bad state of preservation, most of them nummi, and a hoard of 90 corroded Byzantine nummi. Locus 805 yielded one follis of Anastasius I, one medium bronze, and 23 corroded Byzantine nummi.

The number of coins from Area H, including the hoard, is 289.

AREA J

A total of 15 coins were found in this area.

Locus 906 – Northern part of a pool.

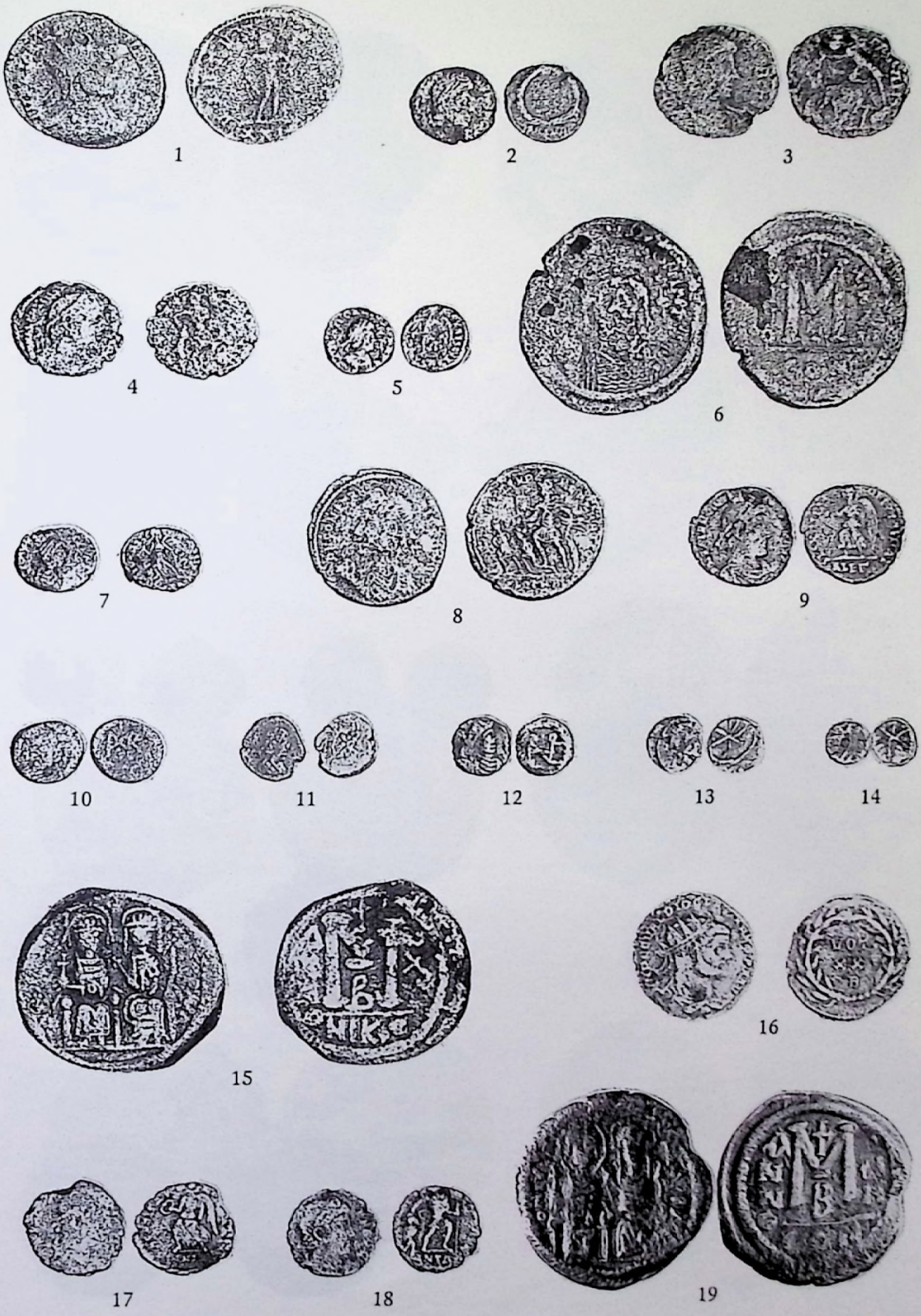
No. 101: As No. 5. Constantius II (337-361 C.E.).
AE, ↓, 4.28 g, 18 mm.

No. 102: As No. 38. Valentinian I (364-375 C.E.).
AE, ↑, 1.74 g, 17 mm.

This locus yielded 11 coins altogether. In addition to those listed above, there are six worn-out coins of the fourth-fifth centuries, one Byzantine nummus, one medium bronze and one Byzantine follis.

Locus 907 – Southern part of the same pool. This locus yielded four coins, three of them completely corroded.

No. 103: As No. 5. Constantius II (337-361 C.E.).
AE, ↓, 4.28 g, 18 mm.



Pl. I. Coins of Area B (1-7). Coins of Area C (8-19).



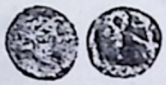
20



21



22



23



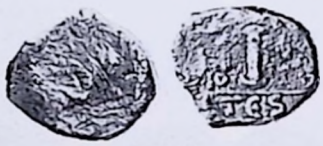
24



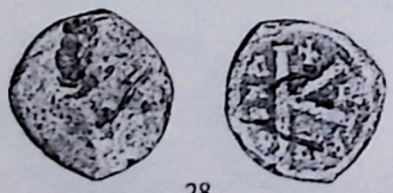
25



26



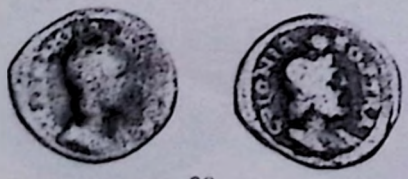
27



28



29



30



31

Pl. II. Coins of Area C (20-31).



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33



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38



39

Pl. III. Coins of Area C (32-39).


40


41

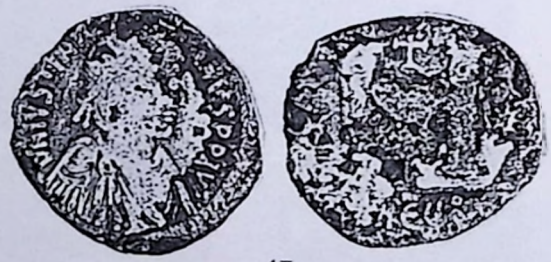

42

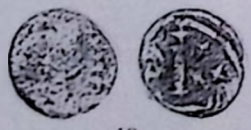

43


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45

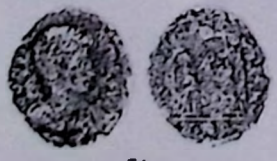

46


47


48


49


50


51

Pl. IV. Coins of Area E (40-44). Coins of Area F (45-49). Coins of Area G (50). Coins of Area H (51).

Table I: Statistical Division into Periods

Area	Locus	Total No. of coins	Roman	Late Roman	Byzantine			Uniden-tifiable	Total from area
					Minimae	Med. AE	Folles		
A	105	5				1	4		
	106	1						1	
	surface	1						1	7
B	211-215	818	1	129	668	14	6		
	203	18			3	2	2	11	
	208	1		1					837
C	313, 317								
	318, 323								
	326	613	1	74	530		8		
	305	130	1	59	63	1	6		
	324	1			1				
	325	9		5		4			
	320	1					1		
	321	92		6	86				
	302, 304	28	1	5	17	3	2		
	310	90		5	84		1		
	311	5			3		2		
	314	14	1	6			7		
	315	163			151	5	7		
	313	1					1		
	306	5			4	1			
	300	4					1	3	
	308	89			89				
	301	4			4				
	322	9						9	1258
D	403	3				2	1		
	420	1					1		
	440	1						1	
	423	5						5	
	432	1						1	
	426	30			15	12	3		
	429	10			4	6			
	441	5		1				4	
	437	2						2	58
E	502, 503								
	516	155	12	80	49		8	6	
	500, 501	20			7	7	6		
	510, 519								
	523								
	508	1					1		
	SWbath	6				1	5		
	505, 521	7			3		1	3	189

Table I (cont.)

Area	Locus	Total No. of coins	Roman	Late Roman	Byzantine			Uniden-tifiable	Total from area
					Minimae	Med. AE	Folles		
F	601	1					1		
	613	86			70	7	9		
	621	97			92	1	4		
	623	3		3					
	625	2				1	1		
	630	1					1		
	605	1					1		
	607	6			6				
	609	2			1			1	
	616	5			3			2	
	618	1		1					
	632	3			3				
	b. 6237	4		4					
	111	3						3	215
G	702	1		--------Solidus--------					
	702	1						1	
	704	3						3	
	726	1						1	
	730	1					1		7
H	800	111		30	81				
	803	33	1		17		2	13	
	804	17		4	13				
	801	2			1			1	
	802	101			101				
	805	25			23	1	1		289
J	906	11		8	1	1	1		
	907	4		1				3	15
Total			**18**	**422**	**2193**	**70**	**96**	**76**	**2875**

Table II: Chronological Table, by Rulers

Period	Ruler	Period of Reign	Area	Total
Roman	Marcus Aurelius & Lucius Verus	161-169	E	1
	Elagabal	218-222	C	
			E	2
	Severus Alexander	222-235	E	1
	Julia Mamaea	222-235	C	
			E	3
	Philip Senior	244-249	E	1
	Trajan Decius	249-251	E	1
	Hostilian	251	C	1
	Volusian	251-253	E	1
	Diocletian	284-305	B	
			C	2

Table II (cont.)

Period	Ruler	Period of Reign	Area	Total
Late Roman-	Constantinus The Great	306-337	C	1
Early Byzantine	Constantius II	337-361	B	
			C	
			J	13
	Constantius Gallus	351-354	B	1
	Valentinian I	364-375	B	
			C	
			J	5
	Valens	364-378	C	
			F	2
	Valentinian II	375-392	C	1
	Arcadius	383-408	B	1
	Theodosius II	402-450	B	1
	Marcian	450-457	C	1
Byzantine	Anastasius I	491-518	B	
			C	
			F	
			H	9
	Justin I	518-527	C	8
	Justinian I	527-565	B	
			C	
			F	5
	Justin II	565-578	B	
			C	
			D	
			E	
			F	27
	Tiberius	578-582	E	1
	Maurice	582-602	C	
			F	2
	Phocas	602-610	C	
			D	2
	Heraclius	610-641	C	
			D	
			E	
			G	4

Table III: Roman Period City-Coins

City	Emperor	Years of Reign	Coin No
Aelia-Capitolina	Marcus Aurelius & Lucius Verus	161-169	72
Gadara	Elagabal	218-222	47
Capitolias	Elagabal	218-222	73
Bostra	Severus Alexander	222-235	74
Bostra	Julia Mamaea	222-235	56, 75, 76
Neapolis	Philip Senior	244-249	77
Caesarea	Trajan Decius	249-251	78
Neapolis	Volusian	251-253	79

SUMMARY AND CONCLUSIONS

The earliest coin at Hammat Gader is a Roman city-coin of Aelia-Capitolina minted under Marcus Aurelius and Lucius Verus (161-169 C.E.). It (No. 72) was unearthed in the central pool of Area E and may indicate the time of its construction. Several other city-coins from the third century C.E. (Nos. 73-79) were found in Loci 502, 503, and 516. All the coins are bronze, except for No. 99, which is a gold solidus of Heraclius.

Two hoards were found: one (Area C, Locus 314) contained seven Byzantine folles of Anastasius I and Justin II (Nos. 58-64) and was most probably a foundation deposit under the floor. The second hoard, consisting of 90 nummi, was also probably a foundation deposit beneath the pavement of Area H (Locus 802).

Over 80% of the pre-Islamic coins uncovered were minted in the Byzantine period. Most of them were corroded nummi (76.8% of all the Roman and Byzantine coins). The quantity of nummi found is quite surprising and raises several questions. What was their use, how did they find their way into the pools, and where were they minted? Many of the nummi were carelessly minted and locally made. The visitors to the pools most probably threw these coins into the water in the belief that they would be healed or in gratitude for being cured.

Most of the motifs on the nummi are very simple, mainly depicting the bust of an emperor on the obverse and a monogram on the reverse. The bust is usually a stereotypical figure, making it impossible to identify the ruler by the portrait. The small size of these coins usually does not leave room for an inscription, so that the monogram on the reverse is sometimes the only clue for identifying the emperor. Not all the monograms are clear and consequently not all of them have been deciphered. The bad state of preservation, and the fact that they were minted carelessly, make identification even harder. Nevertheless, most of these nummi were minted in the fifth and early sixth centuries C.E.

The rulers depicted most frequently on the coins (see Table II) are Constantius II and Justin II and indicate the period when activity at Hammat Gader was at its peak – from the mid-fourth to the end of the sixth centuries C.E.

The numismatic finds contribute to the dating of each area of the baths complex and further enhance our knowledge of therapeutic sites, into whose waters coins were thrown in the belief that one could be cured.

NOTE

1. The numismatic research was carried out by the author at the Bank of Israel. The photographs are by Hedy Yehudaiov and Z. Radovan, and are of selected well-preserved samples. For the coins of the Islamic periods, see Chapter 6.

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CHAPTER 6

MUSLIM COINS

Nitzan Amitai-Preiss and Ariel Berman

Some 1200 Muslim coins were unearthed at Hammat Gader; only 165 of them could be identified. This catalog will include the so-called Arab-Byzantine coins from the transitional period (ca. 611-697), coins from the Umayyad period, two 'Abbāsid coins, three from the Ayyūbid period, and one Mamlūk coin, which is the latest. Except for one gold coin from the 'Abbāsid period, the coins are all made of bronze.

In the following catalog the coins are organized according to the areas of the excavation, within each area according to loci, and within each locus in chronological order. Following the catalog are tables presenting data collated from the Hammat Gader Muslim coins, as well as a plate with the photos of selected coins.

Coins that are legible on both sides have an arrow to show their axis; those that are illegible will not have an arrow, since their axis could not be determined.

THE ARAB-BYZANTINE AND UMAYYAD COINS: DISCUSSION

In the following catalog, the standard arrangement has been used for the listing of coins minted between the end of the Byzantine period and the 'Abbāsid period. According to this arrangement, coins minted before 'Abd al-Malīk's reform (A.H. 77/696-7 C.E.) were termed Arab-Byzantine by J. Walker in his book published in 1956. The coins minted after this monetary and administrative reform are termed Umayyad coins. They are characterized by the absence of human figures and bear religious legends written only in Arabic (Walker 1956:xvi, xxii, xxvi). Bates (1976:17) thinks that this "copper coinage of early Muslim Syria with Byzantine images is not in reality a continuation of Byzantine coinage, but is in fact an innovation, one among those which began the transition to a purely Islamic coinage; or, put more correctly, that the Syrian Arab copper coinage of Byzantine type did not, as commonly supposed, originate soon after the conquest of Syria of 633-36, but rather appeared sixty years later, in the last decade of the seventh century, at the same time that gold and silver coinage was introduced in Syria as part of 'Abd al-Malik's policy."

Recently a new way of arranging these coins was suggested and published by S. Qedar (1988-89). His classification is comprised of series A-K, which were minted from 611 to 800 C.E. This means that some series were first minted in the Byzantine period, at the time of the Sassanian invasion of Syria, while others were minted some 50 years after the 'Abbāsid dynasty came to power. The following discussion is based on Qedar's phases and classification.

Phase I- ca. 611-697 (Series A-E)

Series A is represented here by one coin of Heraclius and it has a countermark of his monogram (see Chapter 5, No. 45, from year 20 of Heraclius; Qedar 1988-89:32).

Series B is represented at Hammat Gader by one coin of Constans II (No. 5) which has an addition of an Arabic inscription in exergue, not an Arabic countermark (Qedar 1988-89:32).

Series C comprises coins depicting figures and bearing Greek or Arabic legends. It is represented here by a single imperial figure with either Greek (No. 25) or Arabic (No. 42) inscriptions, or without an inscription (No. 41). Coin No. 23 is unique

because its reverse seems to be a corrupted version of the reverse of a coin from Ṭabariyya showing three imperial figures, with the combination of TH for the Greek mint name and with لا الله لا under the exergue instead of on the right side of the M.

Series D is distinguished by having the mint name in Greek only. There is one example (No. 148) from Damascus (Qedar 1988-89:33), and another (No. 34) from Scythopolis.

Series E is comprised of coins with figures, featuring the mint name in Arabic and sometimes in Greek, and is represented here by two types. On one coin showing an imperial figure, there appears the mint name Dimashq in Arabic (No. 40). The other type, with three imperial figures, is from Ṭabariyya; it bears the mint name in both Arabic and Greek (Qedar 1988-89:32-33). It is represented here by eight specimens (Nos. 54, 86, 103, 108, 122-125).

Phase II- ca. 685-697 (Series F-G)

No coins of the "standing caliph type" were found in the excavation (Qedar 1988-89:34-35).

Phase III- ca. 697-ca. 800 (Series H-K)

Post-reform (696-7 C.E.) Series

Series H coins bear the Muslim formula of faith (the *shahāda*) and mint names in horizontal lines. The specimens at Hammat Gader are from the mint of Dimashq (No. 7) (Qedar 1988-89:35).

Series I is also of a *shahāda* type, bearing legends in a triple circle on the obverse and the mint formula on the reverse. The specimens at Hammat Gader are from the mints of Dimashq (Nos. 65, 118, 138), Ṭabariyya (Nos. 72, 102) and 'Akkā (Nos. 68, 141) (Qedar 1988-89:35).

Series J has a specific characteristic for each mint. It is represented here by: a lion – from Ṭabariyya (Nos. 82, 153); a star – from al-Urdunn (17 coins, Nos. 66, 104, 119, 126-137, 155, and 162); a palm tree on of reverse of Ṭabariyya coins (24 coins, Nos. 12, 14, 26, 45, 58, 64, 74, 75, 79, 81, 87, 88, 90, 96, 97, 99, 100, 114-117, 140, 159, 160); a palm branch – from Filasṭīn (No. 69).

Series K includes coins with a central representation of objects, animals or floral patterns. In general, these small coins cannot yet be attributed to specific mints. The three exceptions are: a lion from Ṭabariyya, a five- or seven-branched candlestick from Jerusalem (Barag 1988-89: 40-48), and a fish from Baysān (Ilisch 1993:Nos. 274-276). None of the above-mentioned types was unearthed at Hammat Gader. We found only a few types of this series (see Table 2 below), which cannot yet be attributed. The only way in which the mints of these coins can be ascertained, at least in a general way (i.e., by *jund*), is by collating the data from the excavation sites, both in Israel and in Jordan. No doubt the large-scale excavations carried out during the last few years at Beth Shean (Baysān), Caesarea (Qaysariyya) and Beth Govrin (Bayt Jibrin) will contribute to this endeavor.

Most of the Hammat Gader coins which specify their mint name come from *Jund* al-Urdunn (41), within which our site is located, from *Jund* Dimashq (16 coins), and from *Jund* Filasṭīn to the south (6 coins).

Four coins unearthed at Hammat Gader are double strikes. These are:

No. 103: an Arab-Byzantine coin of Ṭabariyya minted over an earlier Arab-Byzantine coin of Ṭabariyya.

No. 10: an Umayyad coin minted over a Byzantine coin.

No. 15: an Umayyad coin minted over an Umayyad coin.

No. 112: an Umayyad coin minted over an Umayyad coin.

The most important of these four overstrikes is No. 10, which attests to the monetary reform enacted by 'Abd al-Malīk. This is the first time that we have found an Umayyad coin minted over a Byzantine coin, although we know of post-reform coins which were minted over late Roman coins (Amitai-Preiss 1990-91:97, No. 4) or over imitation Byzantine and Arab-Byzantine coins (Qedar 1984-85).

Key to Arabic Inscriptions

Most of the Arabic inscriptions below are coded according to the following key:

Obverse Inscriptions:
A لا اله / الا الله / وحده
A2 لا اله ا / لا الله / وحده
B الله احد الله الصمد لم يلد ولم يولد

Reverse Inscriptions:
C محمد / رسول / الله
D ضرب هذا الفلس بدمشق
D1 ضرب / هذا الفلس / بدمشق

In the catalog, Arabic forms of mint names have been used, as follows:

ʻAkkā	Acre
Dimashq	Damascus
Filasṭīn	Ramleh (Arabic: al-Ramlah)
Ṭabariyya	Tiberias
al-Urdunn	Tiberias

CATALOGUE

Area A: The Oval Hall

This area did not yield any Muslim coins. This may seem surprising, but only seven identifiable coins from earlier periods were found there (see Chapter 5). Area A has the second smallest yield of coins. According to Barkay's table, Area G yielded only six coins.

Area B: The Passage Rooms

This area yielded Arab-Byzantine and Umayyad coins in Loci 201, 203, 208, 213, as well as Ayyūbid and Mamlūk coins in Locus 200.

Ayyūbid

1. L. 200 (IAA 32428) (Pl. I:1)
Al-Ẓāhir Ghāzī, Ḥalab (Aleppo), A.H. 582-613/1186-1216 C.E., with the caliph al-Nāṣir, A.H. 575-622/1180-1225 C.E.
Obv. Within a hexagram: الملك / الظاهر
Rev. Within a hexagram: الامام / الناصر
AE, ↙, 2.78 g, 20 mm.
(Balog 1980:215, No. 670)

2. L. 200 (IAA 32429)
As No. 1.
AE, 2.47 g, 20-21 mm.

3. L. 200 (IAA 32427)
Al-Kamil Muḥammad I, A.H. 615-635/1218-1238 C.E.
Obv. A square within a circle, in center:
الملك الكا / مل ناصر الدين
In the margins only traces of inscription are visible.
Rev. Center: محمد بن ابي / بكر بن ايوب
In the margins only traces of inscription are visible.
AE, →, 3.69 g, 20-21 mm.
(Balog 1980:169, No. 465)

Mamlūk

4. L. 200 (IAA 32430) (Pl. I:2)
Al-Ẓahīr Rukn al-Dīn Baybars, A.H. 658-676/1260-1277 C.E.
Obv. الملك الظاهر / lion left / السلطان
Rev. Worn.
AE, 1.57 g, 19 mm.
(Balog 1964:106, No. 101, var. A)

Arab-Byzantine

5. L. 201 (IAA 32552)
Obv. Emperor standing facing.
Rev. m above cross (?); in exergue: traces of Arabic inscription وف; to right: ϕ.
AE, ↘, 1.19 g, 15-17 mm.
(Cf. Walker 1956:51, No. ANS.10; cf. Milstein 1988-89:16, No. 11)

Umayyad

6. L. 201 (IAA 32431)
Obv. Inscription A.
Rev. Within two beaded circles, a bird (hawk ?) flying left; around: inscription C.
AE, ←, 1.74 g, 16 mm.
(Walker 1956:202, No. 590)

7. L. 201 (IAA 32432)
Minted at Dimashq.
Obv. Within a circle: inscription A.
Rev. In the field: inscription D1; outside: two circles broken by ∪ with a dot in center; between circles marginal legend beginning top left: only traces are visible.
AE, ↙, 1.54 g, 14 mm.
(Walker 1956:251, Nos. 829-830)

8. L. 201 (IAA 47207)
Obv. Worn.
Rev. Traces of Arabic inscription.
AE, 0.68 g, 14-16 mm.
(Cf. Walker 1956:217, No. 686)

9. L. 201 (IAA 47208)
Traces of Arabic inscription.
AE, 2.48 g, 14-15 mm.
(Cf. Walker 1956:217, No. 686)

10. L. 201 (IAA 47209) (Pl. I:3)
This coin was double struck: in the first strike it was a Byzantine coin; the second is an Umayyad coin.

First Strike – Byzantine decanummia
Obv. An I in the center, part of a circle.
Rev. Worn.

Second Strike – Umayyad fils
Obv. Inscription A.
Rev. Traces of Arabic inscription.
AE, 1.45 g, 16 mm.

(First strike: for reverse, cf. *DOC*, I, No. 182.3; second strike: cf. Walker 1956:217, No. 686)

11. L. 201 (IAA 32433)
Obv. Inscription A.
Rev. Inscription C.
AE, ←, 1.75 g, 12-14 mm.
(Walker 1956:209, No. 631)

12. L. 201 (IAA 32524)
Minted at Ṭabariyya.
Obv. Worn. (Should be inscription B.)
Rev. Center: Inscription C; on the right traces of a palm tree.
AE, 3.02 g, 18-20 mm.
(Walker 1956:269, No. 898)

13. L. 201 (IAA 47210)
Obv. Inscription A.
Rev. Beginning of inscription C.
AE, ↘, 3.71 g, 15 mm. Broken.
Struck on a thick flan.
(Cf. Walker 1956:217, No. 686)

14. L. 201 (IAA 32532)
Minted at Ṭabariyya.
As No. 12.
AE, ↗, 3.50 g, 18 mm.

15. L. 201 (IAA 47211) (Pl. I:4)
Obv. A hawk or bird within a circle . At the bottom is written: ؟ الله / محمد
Rev. Traces of an outer circle and an inner small one.
AE, 1.38 g, 16 mm.
(For obv., see Walker 1956:245, No. 802)

This coin is a double strike, and may even be a double strike of the same type.

16. L. 201 (IAA 47212)
Traces of Arabic inscription in Umayyad script.
AE, 1.28 g, 13-15 mm, broken.

17. L. 201 (IAA 47213)
Obv. Within an inner circle: inscription A.
Rev. Center: Within an inner circle: inscription C.
Margins: ضرب هذا الفلس
AE, →, 1.35 g, 17 mm.
(Cf. Walker 1956:235, No. P.124)

18. L. 201 (IAA 47214) (Pl. I:5)
Obv. Obliterated.
Rev. In center: a chalice-like object. Around: part of inscription C.
AE, 3.22 g, 16 mm.
(Walker 1956:203, No. 596)

19. L. 201 (IAA 47215)
Obv. Part of inscription A.
Rev. Inscription C.
AE, ↖, 2.06 g, 15 mm, broken.
(Walker 1956:212, No. 660)

20. L. 201 (IAA 47216)
Obv. Inscription A.

Rev. In center: a duck; on left above: رسول
AE, ↖, 2.42 g, 17 mm.
(Cf. Walker 1956:224, No. 730)

21. L. 201 (IAA 47217)
(Minted at al-Ramlah; mint name not visible)
Obv. Within a circle: inscription A.
Rev. In center: a crescent and dot.
AE, ↓, 1.45 g, 16 mm.
(Cf. Walker 1956:245, No. 801)

22. L 201 (IAA 47218)
Obv. Center: inscription A. Margins: traces of inscription.
Rev. Inscription C. Margins: ضرب
AE, ↑, 1.60 g, 15 mm.

Arab-Byzantine

23. L. 203 (IAA 32558) (Pl. I:6)
Obv. εηταυ [τα O NιKA] , Emperor standing facing.
Rev. M, above TH←, from top right counterclockwise. In exergue: لا اله الا; officina B.
AE, →, 2.34 g, 15-22 mm.

(For obv., see *DOC*, II/2:442, No. 59; cf. Goodwin 1993; for rev., cf. Ilisch 1993:30, No. 285, rev. of a Ṭabariyya coin with three imperial figures)

24. L. 203 (IAA 32559)
Obv. Standing figure.
Rev. m.
AE, ↗, 2.21 g, 18 mm.
(Cf. Walker 1956:50, No. 137)

25. L. 203 (IAA 32560)
Obv. Emperor standing facing, holding a sceptre in right hand, wearing crown.
Rev. m, to right: o Λ.
AE, →, 2.38 g, 16-18 mm.
(Cf. Walker 1956:50, No. ASK.2)

Umayyad

26. L. 203 (IAA 32561)
(Minted at Ṭabariyya)
As No. **12**.
AE, ↙, 2.93 g, 16 mm.

27. L. 203 (IAA 32562)
Obv. Worn.
Rev. Traces of inscription.
AE, 0.66 g, 9 mm.
(Walker 1956:212, No. 659)
Fals of reduced size.

28. L. 203 (IAA 32520)
Minted at al-Ramlah.
Obv. Within a double circle with striations: inscription A.
Rev. Tree on right side; in center: inscription C.
AE, ↑, 5.01 g, 18-20 mm.
(Cf. Walker 1956:255, No. 848)

29. L. 203 (IAA 47225)
Minted at Ṭabariyya.
Obv. In center: a grape cluster (this could also be taken to be a ram's head). Around: illegible inscription.
Rev. In center within a circle the mint name: طبر/ية, around: inscription C.
AE, ↓, 2.48 g, 16-18 mm.
(Walker 1956:267, No. P.137)

30. L. 203 (IAA 47226)
Minted at Ṭabariyya.
As No. **29**.
AE, 1.25 g, 15 mm.

31. L. 203 (IAA 47227)
Traces of Arabic inscription.
AE, 3.02 g, 19 mm.

32. L. 203 (IAA 47228)
Obv. Inscription A.
Rev. Inscription C.
AE, ↖, 2.42 g, 21 mm.
(Walker 1956:212, No. 660)

33. L. 203 (IAA 47229)
Obv. Center: part of incription A. Margins: الله, within two circles.
Rev. Corroded.
AE, 3.06 g, 18 mm.
(Cf. Walker 1956:253, No. P.130)

34. L. 203 (IAA 47224)
Minted at Scythopolis.

Obv. Two imperial figures enthroned, traces of the legend [CKYΘO] ΠO [ΛHC] on left side.
Rev. M above cross; on right: ANNO; on left: U; in exergue: NIKO.
AE, ↓, 8.07 g, 28-29 mm, corroded.
(Walker 1956:1, No. 1; Amitai-Preiss et al.: forthcoming)

35. L. 203 (IAA 47219)
Minted at Dimashq.
Obv. Part of inscription A is visible.
Rev. Inscription D1.
AE, 0.83 g, 13 mm.
(Cf. Walker 1956:251, No. 828)

36. L. 203 (IAA 47223)
As No. **35**.
AE, 1.33 g, 16 mm.

37. L. 203 (IAA 47220)
Obv. Inscription A.
Rev. Worn.
AE, 0.73 g, 15 mm.

38. L. 203 (IAA 47221)
Obv. Inscription A.
Rev. Worn.
AE, 1.66 g, 18 mm.

39. L. 203 (IAA 47222)
Minted at Dimashq.
Obv. ..... الله
Rev. Inscription D1.
AE, ↘, 2.68 g, 17 mm.
(Walker 1956:251, Nos. 829-830)

The following seven coins were found in the passageway between Areas B and C, above the floor (L. 208). Three are Arab-Byzantine and four are Umayyad.

Arab-Byzantine

40. L. 208 (IAA 32514) (Pl. I:7)
Minted at Dimashq.
Obv. Emperor standing facing, wearing a robe with a rhombus on it, and a crown. His right hand holds a sceptre, and his left a globe, both surmounted by cross. The outline of the robe is continiued to the right by a line, below which is a O, which, in our opinion, is a decorated form of the letter O of [ΛE] O. In left field: a bird on T top. On right side of exterior of circle: a loop.
Rev. M, above: ƭ, on right: A, on left: § , in exergue: دمشق
AE, ←, 2.55 g, 18 mm.
(For obv., see Walker 1956:5, No. 6; for rev., see Walker 1956:7, No. 20)

41. L. 208 (IAA 32513)
Obv. Emperor standing facing, holding sceptre.
Rev. m, around it at bottom and on right: pellets.
AE, ↘, 1.69 g, 15-17 mm. A square coin.
(Cf. Walker 1956:52, No. 140; for rev., cf. Milstein 1988-89:16, No. 4)

42. L. 208 (IAA 32512)
Obv. Imperial figure standing.
Rev. m; in exergue: traces of Arabic inscription.
AE, ↓, 2.44 g, 16-20 mm. This is one-quarter of a coin; the original coin was cut in a clean fashion.
(Cf. Walker 1956:52, No. ASK.7, who writes that it came from Jerash)

Ummayad

43. L. 208 (IAA 32543)
Obv. Inscription A.
Rev. Worn.
AE, 1.05 g, 16 mm, broken.

44. L. 208 (IAA 32540)
Obv. Inscription A.
Rev. Worn.
AE, 0.69 g, 17-18 mm.
(Cf. Walker 1956:212, No. 659)

45. L. 208 (IAA 32544)
As No. **12**.
AE, →, 1.74 g, 16 mm.
(Walker 1956:202, No. 590)

46. L. 208 (IAA 32515)
As No. **6**, but above the bird's (hawk's) head: ∪.
AE, ↘, 2.12 g, 15-18 mm.
(Ilisch 1993:44, No. 531)

Umayyad

47. L. 213 (IAA 47231)
Obv. Inscription A.
Rev. Worn.
AE, 1.30 g, 15 mm.
(Cf. Walker 1956:202, No. 590 for obverse)

48. L. 213 (IAA 47232)
Minted at Dimashq.
Obv. Inscription A ?
Rev. Inscription D1.
AE, 1.29 g, 13 mm.
(Cf. Walker 1956:251, No. 829)

49. L. 213 (IAA 47230)
Obv. Worn.
Rev. Crescent in the middle.
AE, 2.07 g, 16 mm.
(Cf. Walker 1956:257, No. 855)

50. L. 213 (IAA 47233)
Minted at Ṭabariyya.
As No. 29.
AE, 0.94 g, 15 mm, broken.

The next two coins were found in the western room of Area B.

Arab-Byzantine

51. (IAA 22860)
Obv. Undecipherable legend.
Imperial figure standing facing, wearing short military (?) dress, holding in right hand a globe and in left a sceptre, both surmounted by a cross.
Rev. Worn.
AE, 2.74 g, 18-19 mm.
(Cf. Walker 1956:44, No. Ox. 1)

Umayyad

52. (IAA 22895)
Obv. Worn.
Rev. In center: a crescent, with a point.
AE, 1.24 g, 13-16 mm.
(Cf. Walker 1956:257, No. 855)

Area C: The Hall of Piers

In this area, Arab-Byzantine and Umayyad coins were found in Loci 300, 302-306, 320, 321, 324, 325, 327.

Umayyad

53. L. 300 (IAA 32437)
Obv. Inscription A.
Rev. Center: inscription C.
Margins: [ه]ذا ضرب.
AE, ↙, 3.65 g, 18 mm.
(Cf. Walker 1956:235, No. P.124)

Arab-Byzantine

54. L. 302 (IAA 32522) (Pl. I:8)
Minted at Ṭabariyya.
Obv. Three imperial figures standing facing, wearing long robes, within a circle.
Rev. M, above cross; on left side and in exergue: [THBEP] IAΔOC; to right: طبرية; Officina A.
AE, ↓, 2.85 g, 16 mm. A fals of reduced size.
(Walker 1956:16, No. 51)

Umayyad

55. L. 302 (IAA 32510)
Obv. Inscription A. Traces of a beaded circle at bottom.
Rev. Inscription C.
AE, ↖, 1.77 g, 11 mm. A fals of reduced size.
(Walker 1956:212, No. 659)

56. L. 302 (IAA 47234)
Obv. Part of inscription A.
Rev. Worn.
AE, 3.95 g, 17 mm.

57. L. 302 (IAA 47235)
Obv. Inscription A.
Rev. Center: inscription C; margins: traces of inscription.
AE, 2.27 g, 16 mm.

58. L. 302 (IAA 32523)
Minted at Ṭabariyya.
As No. 12.
AE, ↓, 4.22 g, 17-18 mm.

59. L. 302 (IAA 32528) (Pl. I:9)
Minted at Dimashq.
Obv. Within a double circle: inscription A.
Rev. Within a circle: inscription C.
AE, →, 2.10 g, 17 mm.
(Walker 1956:251, No. 828)

60. L. 302 (IAA 47236)
Minted at Dimashq.
Obv. Inscription A.
Rev. Traces of a circle. In center: inscription C.
AE, 1.46 g, 15 mm.
(Walker 1956:251, No. 829)

61. L. 302 (IAA 47237)
Obv. Inscription A.
Rev. Within traces of circles: inscription C.
AE, ↑, 2.51 g, 21 mm, broken.
(Cf. Walker 1956:212, No. 660)

62. L. 302 (IAA 47238)
Traces of Arabic inscription.
AE, 3.47 g, 18 mm.

63. L. 302 (IAA 47239)
Obv. The beginning of inscription A.
Rev. Worn.
AE, 1.35 g, 13 mm. Small fals.

64. L. 302 (IAA 32525)
Minted at Ṭabariyya.
As No. 12.
AE, ↓, 4.05 g, 18-21 mm.
(Walker 1956:269, No. 898)

65. L. 302 (IAA 32526)
Minted at Dimashq.
Obv. Inscription A.
Rev. At top of circle: ∪; around: inscription D1.
AE, ↘, 5.33 g, 17 mm.
(Walker 1956:251, No. 829)

66. L. 302 (IAA 32527)
Minted at al-Urdunn.
Obv. ... / وحده / الا الله / لا اله
Rev. Center: inscription C.
Margin: ضرب بالاردن [بسم الله]
AE, ↖, 3.36 g, 21 mm.
(Walker 1956:228, No. 743)

67. L. 302 (IAA 32531)
Minted at Ṭabariyya.
As No. 29.
AE, ↙, 2.48 g, 16-18 mm.
(Walker 1956:267, No. P.137)

68. L. 302 (IAA 32530)
Minted at ʿAkkā.
Obv. Within a triple circle: inscription A.
Rev. Center: inscription C.
Margin: بسم الله ضرب بعكا
AE, ↖, 3.77 g, 21 mm.
(Walker 1956:274, No. 904)

69. L. 302 (IAA 32529) (Pl.I:10)
Minted at Filasṭīn.
Obv. Center: inscription A.
Margin: لله الملك فلسن واف
Rev. Center: inscription C.
Margin: ضرب بفلسطين and a palm branch.
AE, ←, 3.00 g, 27 mm.
(Walker 1956:276, No. 911; Ilisch 1993:10, Nos. 17-21; Ilisch attributed this type of coin to the mint of Iliyā)

70. L. 302 (IAA 32518) (Pl. I:11)
Obv. حده / ☩ الله / لا اله ا. The *waw* is upside-down.
Rev. الله / رسول / محمد
AE, ↘, 3.62 g, 15-19 mm.
(Cf. Walker 1956:209, No. 633)

71. L. 302 (IAA 32519)
Obv. وحده / ا لا الله / لا ا له. The line ا لا الله is written twice.
Rev. Within a circle: inscription C.
AE, ↓, 3.34 g, 17-19 mm.
(Cf. Walker 1956:209, No. 633)

72. L. 302 (IAA 32521) (Pl. I:12)
Minted at Ṭabariyya.
Obv. Within three circles: inscription A.
Rev. In center: inscription C; marginal inscription: بسم الله ضرب هذا الفلس بطبرية
AE, ↗, 4.00 g, 19-20 mm.
(Cf. Walker 1956:268, No. 891)

73. L. 302 (IAA 32511)
Obv. Inscription A2.
Rev. Inscription C.
AE, ↗, 3.33 g, 17-18 mm.
(Walker 1956:210, No. 638)

74. L. 302 (IAA 32533)
Minted at Ṭabariyya.
As No. 12.
AE, ↘, 4.20 g, 19 mm.

75. L. 302 (IAA 32438)
Minted at Ṭabariyya ?
As No. 12.
AE, →, 3.04 g, 17 mm.
(Cf. Walker 1956:269, No. 898)

76. L. 302 (IAA 32442)
Obv. Within a circle, with one loop at top: inscription A.
Rev. Within a circle, with one loop at bottom: inscription C.
AE, ↙, 3.07 g, 17-19 mm.
(Walker 1956:209, No. 633)

77. L. 302 (IAA 32516)
Obv. Center: inscription A.
Margin: illegible inscription.
Rev. Center, within a circle: inscription C.
Margin: illegible inscription.
AE, ↘, 3.47 g, 21 mm.
(Cf. Walker 1956:241, No. 784, for arrangement of the rev.)

78. L. 302 (IAA 32517)
Obv. Only the beginning of inscription A.
Rev. Worn.
AE, 3.83 g, 16-17 mm.

79. L. 302 (IAA 32439)
Minted at Ṭabariyya.
As No. 12.
AE, ←, 4.69 g, 15-17 mm.
(Cf. Walker 1956:269, No. 898)

80. L. 302 (IAA 32443)
Obv. Within a beaded circle: inscription A.
Rev. Within a beaded circle: inscription C.
AE, ↖, 2.70 g, 17 mm.
(Walker 1956:209, No. 631, var.)

81. L. 302 (IAA 32440)
Minted at Ṭabariyya ?
As No. 12.
AE, ↙, 2.57 g, 20-21 mm.
(Cf. Walker 1956:268, No. 890)
Note: there is a dot after the *ha'* of *allah* on the reverse.

82. L. 302 (IAA 32441)
Minted at Ṭabariyya.
Obv. Center: inscription A.
Margin: traces of inscription.
Rev. In the field, lion couchant to left below inscription C.
AE, ↖, 3.26 g, 12 mm.
(Walker 1956:270, No. ANS.42; for the full expected legend, see Ilisch 1993:32, No. 324)

83. L. 302 (IAA 32444)
Obv. Inscription A.
Rev. Inscription C.
AE, ↗, 2.56 g, 14-15 mm.
(Walker 1956: 209, No. 631)

Umayyad

84. L. 305 (IAA 32445)
As No. 66.
AE, ↑, 3.46 g, 15-21 mm.
(Cf. Walker 1956:235, No. P.124)

85. L. 305 (IAA 47240)
Obv. Inscription A.
Rev. Traces of illegible letters.
AE, 2.13 g, 20 mm.

Arab-Byzantine

86. L. 306 (IAA 32446) (Pl. I:13)
Minted at Ṭabariyya.
Obv. Three imperial figures standing facing, wearing long robes and crowns surmounted by crosses; each holds in his right hand a small globus cruciger; below: exergual line.
Rev. M, above ☩; on left: THEB...; on right: طبرة
AE, ↖, 2.12 g, 21mm.

(Cf. Walker 1956:15, No. 43; for the same defect in the mint name, on an Umayyad coin, see Ilisch 1993: 30, No. 297)

Umayyad

Basket 3217 from L. 306 contained 12 coins.

87. (IAA 32453)
Minted at Ṭabariyya.
As No. **12**.
AE, ↘, 2.53 g, 17 mm.

88. (IAA 32448)
As No. **12**.
AE, ↑, 0.84 g, 17 mm, broken.

89. (IAA 32452)
Obv. Inscription A.
Rev. In the field: inscription C; on the right: a small tree or bush.
AE, ↘, 1.76 g, 13 mm.
(Cf. Walker 1956:269, No. 89)

90. (IAA 32451)
Obv. As No. **12**.
Rev. Retrograde inscription; thus the bush is on the left side of the inscription.
AE, ↘, 1.21 g, 21 mm.

91. (IAA 32450)
Obv. Within a circle: inscription A.
Rev. Center: inscription C.
Margin: traces of letters.
AE, ↗, 2.53 g, 26-28 mm.
(Cf. Walker 1956:269, No. 898)

92. (IAA 32447)
Obv. Inscription A.
Rev. Inscription C.
AE, ↖, 0.72 g, 10-11 mm.
(Walker 1956:212, No. 659)
This appears to be a fals of reduced size.

93. (IAA 32454)
Minted at Dimashq.
Obv. In the center: a rosette within a circle; around: inscription A.
Rev. In center: a six-pointed star within a circle; around: inscription D.
AE, 0.80 g, 16 mm, broken.
(Walker 1956:248, No. 812)

94. (IAA 32455)
As No. **92**.
AE, ↑, 1.41 g, 17 mm.

95. (IAA 32449)
Worn.
AE, 0.59 g, broken.

Umayyad

96. L. 320 (IAA 32456)
Minted at Ṭabariyya.
As No. **12**.
AE, 12.99 g, 18-20 mm.
(Walker 1956:269, No. 898)

97. L. 320 (IAA 32458)
Minted at Ṭabariyya.
As No. **12**.
AE, ↖, 2.93 g, 19 mm.

98. L. 320 (IAA 32457)
Obv. Within a beaded circle: inscription A.
Rev. Within a circle: inscription C.
AE, ←, 2.87 g, 16 mm.
(Cf. Walker 1956:209, No. 631)

Umayyad

99. L. 321 (IAA 32459)
Minted at Ṭabariyya.
As No. **12**.
AE, ↗, 3.72 g, 19 mm.

Umayyad

100. L. 324 (IAA 22847)
Minted at Ṭabariyya.
As No. **12**.
AE, ↘, 3.38 g, 20 mm.
(Walker 1956:269, No. 898)

101. L. 324 (IAA 22852)
Minted at Dimashq.
Obv. Center: inscription A.
Margin: worn.

Rev. In center: inscription D1.
AE, ↖, 2.08 g, 15-16 mm.
(Walker 1956:251, No. 832)

Umayyad

102. L. 325 (IAA 22851)
Minted at Ṭabariyya.
Obv. Within three circles: inscription A.
Rev. Center: inscription C.
Margin: بسم الله ضرب هذا الفلس بطبرية
AE, ↗, 3.58 g, 22-24 mm.
(Cf. Walker 1956:268, No. 891)

Arab-Byzantine

103. L. 327 (IAA 32460) (Pl. I:14)
Minted at Ṭabariyya.
Obv. Three standing figures as on No. **54**.
Rev. M; on left: traces of TN (corruption of TH). Traces of an Arabic inscription طبر are visible on right side of M; in exergue: صمد؟
AE, ↗, 1.85 g, 20 mm.

This is an unusual coin. On the reverse a double strike is visible: the first strike is an Arab-Byzantine type bearing the regular legend and the mint name in Greek and Arabic (see No. **54** above); the second strike is the Arabic word صمد, and represents a slightly later type from Ṭabariyya.

(First strike: Walker 1956:16, No. 51; second strike: Avisar 1973:64, Nos. 23-25; the type of the first strike is dated to ca. A.H. 70, [Ilisch 1993:30, Nos. 281-282]; the date of the later strike is dated ca. A.H. 70-77 [see Ilisch 1993:30, No. 285])

Umayyad

104. L. 327 (IAA 32546)
Minted at al-Urdunn.
As No. **66**.
AE, 2.43 g, 20 mm.
(Cf. Walker 1956:228, No. 743)

105. L. 327 (IAA 32548)
Minted at Dimashq.
As No. **93**.
AE, ↗, 1.36 g, 18 mm, broken.
(Walker 1956:248, No. 812)

Area D: The Hall of Fountains

In this area Muslim coins were found in Loci 423 and 429.

Umayyad

106. L. 423 (IAA 22855)
Obv. Within a circle: inscription A.
Rev. Inscription A.
AE, ↙, 2.20 g, 14-16 mm.
Both sides bear the same legend, which is that of the obverse of an Umayyad coin.

107. L. 429 (IAA 32461)
Obv. The last part of inscription A.
Rev. Worn.
AE, 3.02 g, 17 mm.

Area E: The Hall of Inscriptions

Muslim coins were found in the following loci: 505, 512, 513, 516, 525. Two additional coins were found in localities which were not given locus numbers.

Arab-Byzantine

108. L. 505 (IAA 32493)
Minted at Ṭabariyya.
Obv. As No. **54**.
Rev. M, above: ☩; on left: THEBPIAΔO; on right: [طبرية]; officina A.
AE, →, 1.88 g, 18-19 mm.
(Cf. Walker 1956:16, No. 51, var.)

Umayyad

109. L. 505 (IAA 32507)
Obv. Within a beaded circle: inscription A.
Rev. Within a circle: inscription C.
AE, →, 3.11 g, 18 mm.
(Walker 1956:210, No. 638)

Basket 5171 from Locus 512 yielded 12 Umayyad coins (Nos. **110-121**).

110. (IAA 32471)
Obv. Inscription A.
Rev. First word of inscription C.

AE, ↖, 5.75 g, 18 mm.
This is a thick fabric fals, probably of Egyptian origin (cf. Miles 1958).

111. (IAA 32472)
Obv. In a double zigzag circle: inscription A.
Rev. Inscription C.
AE, ↗, 3.27 g, 20-21 mm.
(Cf. Walker 1956:209, No. 631)

112. (IAA 32473) (Pl. I:15)
Obv. Within a circle: inscription A. Traces of an Arabic inscription from a previous strike are visible at bottom right and left sides.
Rev. Within a circle: inscription C. Traces of an Arabic inscription from a previous strike are visible on upper left side.
AE, ↖, 3.72 g, 18-20 mm.
(Walker 1956:209, No. 631; Cf. Qedar 1984-85:66)

113. (IAA 32470)
Obv. Within a beaded circle: inscription A.
Rev. Within a beaded circle: inscription C.
AE, ↗, 3.22 g, 17 mm.
(Cf. Walker 1956:212, No. 662)

114. (IAA 32469)
As No. **12**.
AE, ↗, 3.21 g, 18 mm.

115. (IAA 22846)
As No. **12**.
AE, ↓, 3.15 g, 19 mm.

116. (IAA 32467)
As No. **12**.
AE, ↙, 3.39 g, 20 mm.

117. (IAA 32466)
As No. **12**.
AE, ↗, 3.16 g, 17 mm.

118. (IAA 32464)
Obv. Within a circle: inscription A.
Rev. Inscription C.
AE, ↗, 3.39 g, 21 mm.
(Cf. Walker 1956:212, No. 662)

119. (IAA 32465)
Obv. Within a circle with one loop at top right: inscription A. Note that the letters *lam* and *waw* are retrograde.
Rev. Inscription C.
AE, ↗, 3.12 g, 19 mm.
(Cf. Walker 1956:210, No. 642, for the annulet)

120. (IAA 32462)
Minted at Dimashq.
Obv. Within a triple circle: inscription A.
Rev. In center: inscription D1.
Margin: illegible inscription.
AE, ↙, 3.64 g, 22 mm.
(Walker 1956:282, No. 829)

121. (IAA 32463)
Minted at al-Urdunn.
As No. **66**, but inscription A on obverse, within a circle with one loop at bottom left.
AE, ↗, 3.28 g, 19 mm.
(Cf. Walker 1956:228, No. 743; Ilisch 1993:32, Nos. 331-338)

The following 18 Umayyad coins were found in basket 5182 from L. 513. Four are Arab-Byzantine coins (Nos. **122-125**), all of the same type minted at Ṭabariyya and featuring three imperial figures. The rest are Umayyad: 12 are of the same type and were all minted in al-Urdunn (Nos. **126-137**). This mint was situated at Ṭabariyya, the capital of this *jund* (Walker 1956: 228, Note 2; Ilisch 1993:32, Nos. 331-338). Their weights range from 3.36-4.45 g. The other two (Nos. **138-139**) were minted at Dimashq.

Arab-Byzantine

122. (IAA 32474)
Minted at Ṭabariyya ?
Obv. As No. **54**.
Rev. M.
AE, 3.60 g, 26 mm.
(Cf. Walker 1956:15, No. 43)

123. (IAA 32475)
Minted at Ṭabariyya.
Obv. As No. **54**.
Rev. M, above ?; Officina A; on left mint name in Greek, on right in Arabic.

AE, ↓, 3.60 g, 26 mm.
(Cf. Walker 1956:16, No. 48)

124. (IAA 32480)
Minted at Ṭabariyya.
Obv. As No. **54**.
Rev. M, above: ☨; on left: THBEP1AΔOC; on right, clockwise in unpointed script: طبرية
AE, ↖, 2.26 g, 27 mm.
(Cf. Walker 1956:16, No. 48)

125. (IAA 32476) (Pl. I:16)
Minted at Ṭabariyya.
As No. **54**.
AE, ↓, 3.98 g, 23-26 mm.
(Walker 1956:16, No. 51)

Umayyad

126. (IAA 32482)
Minted at al-Urdunn.
Obv. Inscription A, in the fourth line a star.
Rev. Center: inscription C.
Margin: بسم الله ضرب بالاردن
AE, ↖, 4.45 g, 15 mm.
(Walker 1956:228, No. 743)

127. (IAA 32481)
As No. **126**.
AE, ↘, 4.42 g, 26 mm.

128. (IAA 32483)
As No. **126**.
AE, ↖, 3.36 g, 20 mm.

129. (IAA 32484)
As No. **126**.
AE, ↑, 3.93 g, 26 mm.

130. (IAA 32485)
As No. **126**.
AE, ↙, 4.06 g, 18 mm.

131. (IAA 32486)
As No. **126**.
AE, ↖, 3.80 g, 18-21 mm.

132. (IAA 32487)
As No. **126**.
AE, ↙, 3.37 g, 20 mm.

133. (IAA 32488)
As No. **124**.
AE, ↖, 4.23 g, 17-19 mm.

134. (IAA 32489)
As No. **126**.
AE, ↗, 4.35 g, 21 mm.

135. (IAA 32490) (Pl. I:17)
As No. **126**.
AE, ↙, 4.35 g, 22 mm.

136. (IAA 32491)
As No. **126**.
AE, ↖, 3.67 g, 20-23 mm.

137. (IAA 32492)
As No. **126**.
AE, ↗, 3.69 g, 23 mm.

138. (IAA 32477)
Minted at Dimashq.
Obv. Within a triple circle of beads: inscription A.
Rev. Within a double circle cut at the top by an ellipse and star: inscription D1.
Marginal inscription: بسم الله محمد رسول الله
AE, ↙, 3.31 g, 20 mm.
(Walker 1956:251, No. 829)

139. (IAA 32479)
Minted at Dimashq.
As No. **7**.
AE, ↖, 2.89 g, 22-23 mm.
(Walker 1956: 251, No. 829)

140. L. 513 (IAA 32545)
Minted at Ṭabariyya.
As No. **12**.
AE, ←, 3.42 g, 18 mm.

Umayyad

141. L. 516 (IAA 22845)
Minted at ʿAkkā.
As No. **68**.
AE, ↖, 2.6 g, 16-20 mm.
(Cf. Walker 1956:274, No. 904)

Area F: The Service Court

In this area Muslim coins were found in Loci 601 and 620.

Byzantine (seventh century) or Arab-Byzantine

142. L. 601 (IAA 22858)
Obv. Worn.
Rev. m.
AE. The technical details of this coin are unknown.

Umayyad

143. L. 620 (IAA 32495)
Minted at Ṭabariyya.
As No. 29.
AE, →, 1.78 g, 16 mm.
(Walker 1956:267, No. P.137)

144. L. 620 (IAA 32494)
Minted at Dimashq.
Obv. Inscription A.
Rev. Inscription D1.
AE, ↓, 1.04 g, 13-16 mm.
(Cf. Walker 1956:251, Nos. 829-830)

Area G: The Hot Spring Hall

Only one Muslim coin was found in Locus 702.

'Abbāsid

145. L. 702 (IAA 22853)
Obv. Worn.
Rev. Inscription C.
AE, ↓, 0.30 g, 13 mm.
A cast coin.
(Cf. Berman 1976:38, No. 89)

Area H: The Entrance Corridor

Arab-Byzantine and Umayyad coins were found in three loci (803, 805, 806) in this area.

Arab-Byzantine

146. L. 803 (IAA 32554)
Obv. Emperor standing facing.
Rev. m, above cross; to left: cross ; in exergue: A.
AE, ↙, 3.64 g, 20-26 mm.
(Cf. Milstein 1988-89:16, No. 5)

147. L. 803 (IAA 32555)
Obv. Traces of emperor standing facing, above his head o.
Rev. m.
AE, ↙, 3.41 g, 21-22 mm.
(Cf. Milstein 1988-89:16, No. 9 for obverse)

148. L. 803 (IAA 32534)
Minted at Dimashq.
Obv. Imperial figure standing facing.
Rev. M, above  ; on left: ANO; on right: X ⊣ C; in exergue: ΔAM; officina .
AE, ↘, 2.38 g, 22 mm.
(Milstein 1988-89:18, No. 52)

Umayyad

149. L. 803 (IAA 32509)
Obv. In center: traces of a design no longer identifiable; around: inscription A.
Rev. First word of inscription C.
AE, 1.17 g, 17 mm, broken.
(Cf. Walker 1956:222, No. 720)

150. L. 803 (IAA 32497)
Obv. Beginning of inscription A.
Rev. Inscription C.
AE, ↖, 2.03 g, 16 mm.

151. L. 803 (IAA 32496)
Obv. First part of inscription A.
Rev. Inscription C.
AE, 1.52 g, 13 mm.

152. L. 803 (IAA 32557)
Obv. Inscription A.
Rev. Inscription C.
AE, ↗, 2.74 g, 16 mm.
(Cf. Walker 1956:209, No. 631)

153. L. 803 (IAA 32502)
Minted at Ṭabariyya.
Obv. Worn.
Rev. In the field: lion couchant to left; below: inscription C.

Traces of marginal legend.
AE, 4.29 g, 17 mm.
(Walker 1956:270, No. ANS.42)

154. L. 803 (IAA 32501)
Obv. Center: inscription A.
Margin: illegible.
Rev. Worn.
AE, 4.04 g, 17 mm.

155. L. 803 (IAA 32503)
Minted at al-Urdunn.
As No. **126**.
AE, ↘, 2.74 g, 20-23 mm.
(Walker 1956:228, No. 743)

156. L. 803 (IAA 32500)
Minted at Dimashq.
As No. 7.
AE, ↓, 3.00 g, 20 mm.
(Walker 1956:251, No. 829)

157. L. 803 (IAA 32504)
Obv. Inscription A.
Rev. Inscription C.
AE, ←, 2.94 g, 13-15 mm.
(Cf. Walker 1956:210, No. 638)

158. L. 803 (IAA 32537)
Obv. Amphora; around: traces of inscription A.
Rev. Inscription C.
AE, ↑, 2.02 g, 14 mm.
(Walker 1956:206, No. 114)

159. L. 803 (IAA 32538)
Minted at Ṭabariyya.
As No. **12**.
AE, ↘, 2.32 g, 24 mm.
(Walker 1956:269, No. 898)

160. L. 803 (IAA 32539)
Minted at Ṭabariyya.
As No. **12**.
AE, ↓, 4.23 g, 18 mm.
(Walker 1956:269, No. 898)

161. L. 803 (IAA 32536)
Minted at Dimashq.
Obv. Within double circle with two loops between them, one on right and the other at bottom: inscription A.
Rev. Center: inscription C.
Margin: inscription D.
AE, ↖, 3.84 g, 20-24 mm.
(Cf. Walker 1956:253, No. 838)

Umayyad

162. L. 805 (IAA 32506) (Pl. I:18)
Minted at al-Urdunn.
Obv. Within a circle: لا اله / الا الله / وحده / *ده
Rev. Center: inscription C.
Margin: بسم الله ضرب بالاردن
AE, ↓, 3.67 g, 19-21 mm.
(Cf. Walker 1956:228, No. 743)

Arab-Byzantine

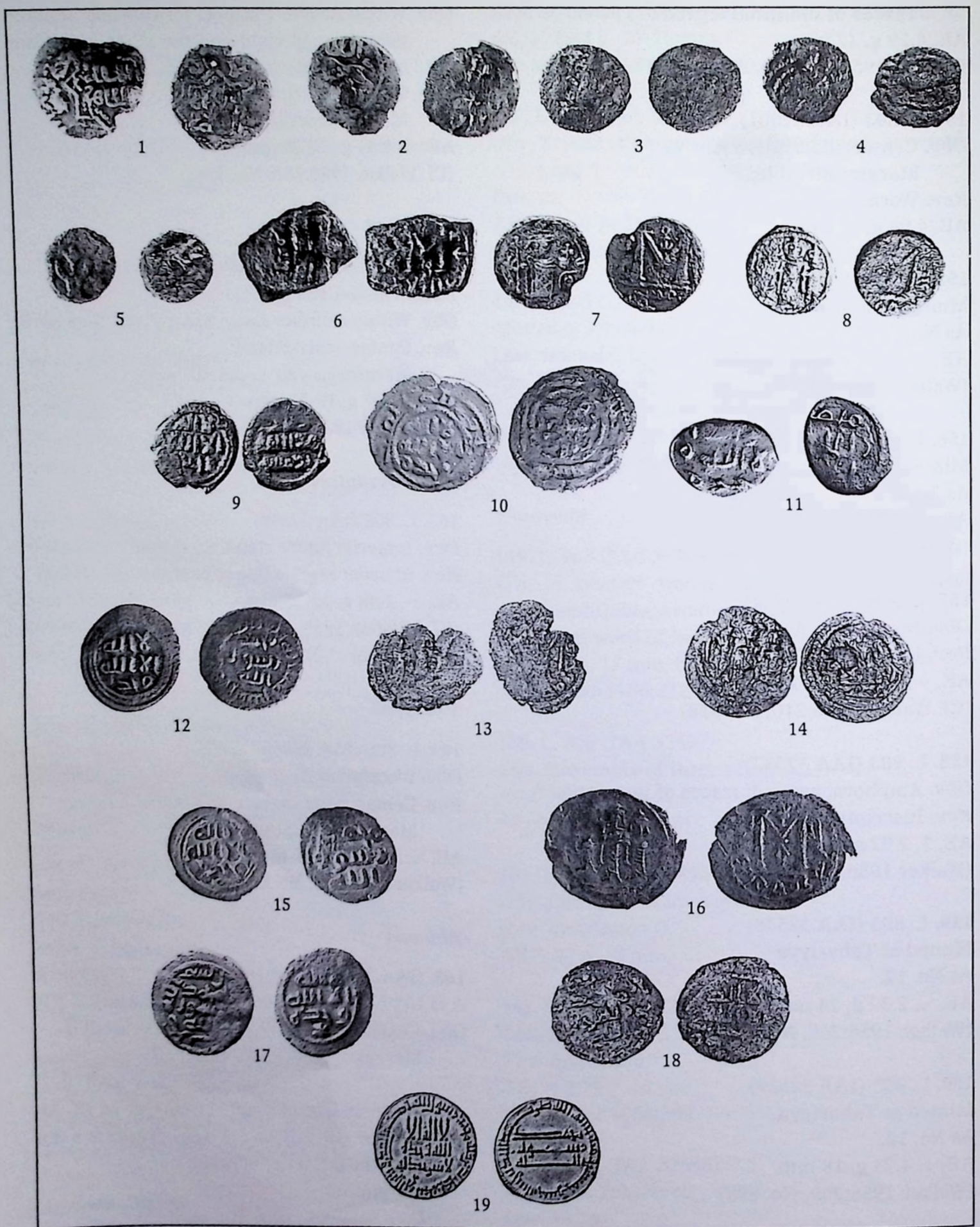
163. L. 806 (IAA 22848)
Obv. Imperial figure standing, facing.
Rev. m underneath a line of exergue.
AE, →, 2.98 g, 19-25 mm.
(Cf. Milstein 1988-89:16, No. 9, only in the general appearance)

Umayyad

164. L. 806 (IAA 22850)
Obv. Inscription A.
Rev. Center: pomegranate or a bud of a flower.
Margin: inscription C.
AE, ↘, 3.69 g, 16-17 mm.
(Walker 1956:203, No. 595)

'Abbāsid

165. (IAA 22857) (Pl. I:19)
A.H 155/771-772 C.E. (reign of Al-Mansūr)
Obv. Center: لا اله الا / الله وحده / لا شريك له
Margin: محمد رسول الله ارسله بالهدى ودين الحق ليظهره على الدين كلّه
Marginal legend adapted from Qur'an IX, 33.
Rev. Center: محمد / رسول / الله. There is a dot after the last letter of *rasūl*.
Margin:
ضرب هذا الدينرسنة خمس وخمسين ومئة
AV, ↙, 4.20 g, 18 mm.
(Lane-Poole 1876:39, No. 21)



Muslim Coins. The Distribution of the Coins according to Excavation Areas. Coins from Area B: Nos. 1-6; between Areas B and C: No. 7; coins from Area C: Nos. 8-14; coins from Area D: Nos. 15-17; coins from Area H: Nos. 18-19.

Table 1: Statistical Table of All the Coins

Area	Locus	Arab-Byzantine	Umayyad	'Abbāsid	'Ayyūbid	Mamlūk	Total from Area
A							0
B	200				3	1	
	201	1	21				
	203	3	8				
	208	3	4				
	213		4				42
C	300		2				
	302	1	29				
	305		2				
	306	1	9				
	320		3				
	321		1				
	324		2				
	325		1				
	327	1	2				49
D	423		1				
	429		1				2
E	505	1	1				
	512		12				
	513	4	14				
	516		1				33
F	601	1					
	620		2				3
G	702			1			1
H	803	4	16				
	805		1				
	806	1	1				23

Table 2: Coins from Hammat Gader not Bearing Mint Names

Design	Total Number	Catalogue No.
Amphora	1	158
Pomegranate	1	164
Bird or hawk with spread wings	2	6, 15, 46
Duck	1	20
Chalice	1	18

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CHAPTER 7

THE OIL LAMPS

Tania Coen Uzzielli

INTRODUCTION

The pottery assemblage from Hammat Gader includes a large number of oil lamps dealt with in this chapter.

The number of the complete lamps found at Hammat Gader is 148 but if we take into account fragments, such as handles and bases, the number approaches 350.

The majority of the lamps were found concentrated in two areas. In Area B the lamps were found in groups on the bottom of the small rectangular pool (Locus 211). Another concentration of lamps was found in an alcove, in the southern wing of the Hall of Fountains in Area D (Locus 441). Here too the lamps were revealed in groups and apparently had been stored there.

It is interesting to note that many of the Hammat Gader lamps lack the soot marks which are characteristic of ancient oil lamps even after single usage. The large quantity of such lamps suggests the possibility that they were linked to certain cults or traditions practised in the baths complex. The excavators have already stressed the relationship between the lamps and the existence of a pool for lepers (Hirschfeld and Solar 1981:206).

On the basis of the large quantity of these lamps, their distribution over the entire site and the lack of soot marks, we are led to think that another tradition was associated with the site. According to the inscriptions, Hammat Gader was considered to be a "holy place"; some inscriptions start with the formula: "in this holy place..."[1]

The presentation of oil lamps as votive offerings in holy places was a popular custom in ancient times. Sozomenos refers to this tradition when talking about Mambre: the pagans were accustomed to place oil lamps next to the Well of Abraham.[2] Antoninus of Placentia also refers to a similar tradition when he mentions the visit of Jews to the tombs of Jacob and David at Hebron.[3]

The large number of sootless lamps at Hammat Gader seems therefore to be the result of the custom of making such offerings on visits to the baths.[4] In later times, when the baths were restored and renovated, the lamps were stored under the pavements or in the niches,[5] as they were considered to be votive offerings.

The oil lamps attest to the continuous use of the baths at Hammat Gader from the Late Roman and Byzantine periods until the Abbasid period. The earliest fragments found are of Roman decorated discus lamps dating to the second century. The majority of the lamps are from the fourth-fifth centuries, but there are also Islamic lamps of the Umayyad and Abbasid periods, and very few from the later Islamic periods (eleventh-fourteenth centuries).

This chapter includes a typological discussion according to the chronology of the lamps. It is followed by a catalogue of 50 lamps chosen as the most representative of the assemblage. The specimens and the place where they were found are described in the tables; the measurements and the parallels from other sites are referred to in the catalogue.

Two groups of lamps (bilanceolate and elongated) from the site are very large and have many variants. Because of the great variety we decided not to include the parallels for each lamp in the catalogue. Most of the parallels come from northern Palestine and Transjordan, in particular from the sites of Pella and Jerash.* This attests to the regionalism of the fabric of the pottery, especially in the Late Roman and Byzantine periods.

Roman Lamps with Decorated Discus (Pl. I:1-2)

Two small fragments of oil lamps, found in a mixed later ceramic context, belong to the earliest kind of lamps revealed at Hammat Gader: the Roman lamp with decorated discus. This type of lamps is mold-made and characterized by a round body with a shallow discus decorated in relief, a small filling-hole, a short and rounded nozzle, and the lack of a handle. The clay is buff and well fired, with a red slip.

One of these fragments, found in Locus 630, consists of a round base and part of the rim decorated near the nozzle with a volute and a double ax. The discus is broken but it is possible to discern remnants of a relief decoration.

The other was found in the small rectangular pool (Locus 211) in Area B, together with bilanceolate lamps (see below). This is a fragment of the upper part of a round discus lamp decorated on the discus with a shell pattern and on the rim with an egg-and-dart pattern.

Lamps of this kind are distributed throughout Syria and Palestine, and date from the end of the first century until the third century.[6]

According to Barag (1978:36), the double-ax decoration on the rim is characteristic of lamps of the second century. It seems very likely that our specimens date to the second century, although they come from later contexts. Later examples of this kind of lamp were found at Hammat Gader and date to the third-fourth centuries (see below, Late Roman Lamp with Broken Discus).

Bilanceolate Lamps (Pls. I:5-6, II)

A group of 60 intact bilanceolate lamps (Fig. 1) and many fragments of them were found under the pavement which covered the pool in Area B (Locus 211). The lamps were found in groups on the bottom of the pool and they all lack soot marks.

Many other lamps of the same type come from Locus 305 in Area C. They were found on the bottom of the bath together with three coins from the mid-fifth century. The bilanceolate lamp has a small oblong body formed by two molded parts joined together; the nozzle is incorporated (Figs. 2, 3). The handle projects horizontally and not higher than the lamp and is tongue-shaped. The base is slightly convex. The decoration consists of various impressed patterns, such as herringbone or circles and dots. The material consists of buff clay and a brownish slip.

The majority of these lamps come from the pool in Area B (Locus 211), which was in use, according to the numismatic evidence, from the late third-early fourth centuries until the sixth century.

Some fragments of the bilanceolate lamps were found in Locus 516 (Area E), under the pavement which is dated by the inscriptions to the mid-fifth century (see Chapter 3), and the ceramic assemblage points to a fourth-century date although some coins are from the sixth century.

The archaeological context of the bilanceolate lamps at Hammat Gader points to a fourth-sixth century date although it seems the lamps are earlier than the sixth century; the first half of the fifth century seems preferable.

At Beth Shearim, according to Avigad (1976:189, Pl. LXXI:28-29), these lamps are dated to the mid-fourth century. At Capernaum they occur in different contexts, one dated to the third-fourth centuries (Loffreda 1974:122, Fig. 48:11) and another to the fourth century (idem:115, Fig. 38:25). At Nazareth (Bagatti 1969:136, Fig. 235:21, 24; 304, Fig. 81-1, 10) the lamps were found under the mosaic floor of the church dated to the mid-fifth century. At Pella the date of the lamps is third-fourth centuries (Smith 1973:215-216, Pls. 60, 65, 78).

Other sites for which the date is not mentioned are: Meiron (Meyers et al. 1981:Pl. 9:19, 1), Kh. Shema' (Meyers et al. 1976:Pl. 8:10, 2, 3), Beth Shean (Fitzgerald 1931:Pl. XXXVI:15-16).

In summarizing the archaeological evidence, we note that the bilanceolate lamps are found only in the northern part of Palestine, and that they made their appearance in the latter years of the third century, were widely used in the fourth century, and are also to be found in some early fifth-century contexts.

At Hammat Gader the archaeological evidence points to an end of the fourth-early fifth-century date of the lamps.

The catalogue (nos. 4-13) does not include all the bilanceolate lamps found, but only variations of the

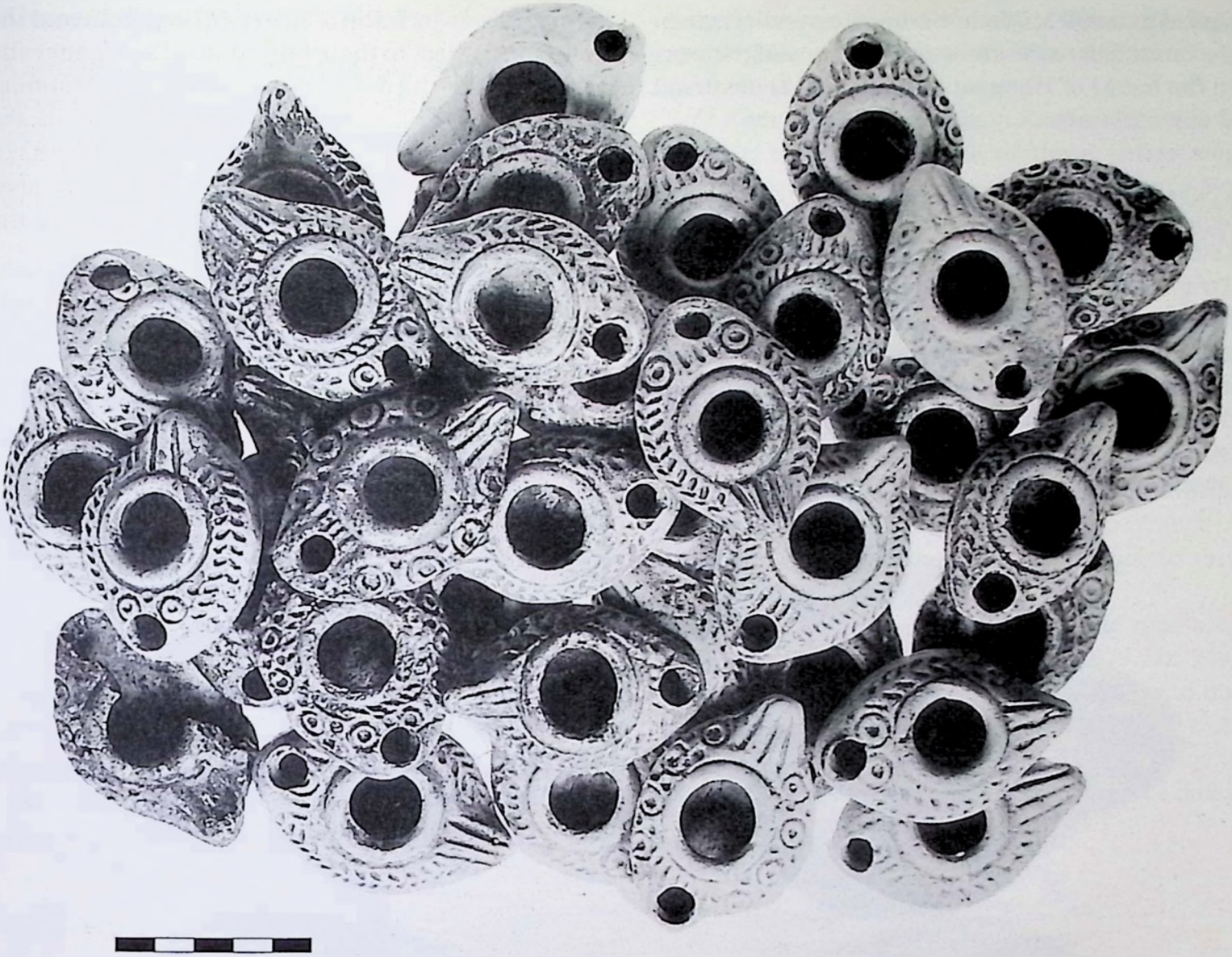


Fig. 1. Group of bilanceolate lamps found in Locus 211.



Fig. 2. Bilanceolate lamps.



Fig. 3. Double-nozzled lamp found in Locus 211.

typical examples. Furthermore, the parallels given are limited because of the great variety of patterns on the lamps of Hammat Gader, which is not found at any other sites.

Late Roman Lamps with Broken Discus (Pl. I:3-4)

Two ovoid lamps with a large filling-hole were found together with the bilanceolate lamps. They have a flat ovoid body; one of them has a broken discus forming a large filling-hole, while the other has a large filling-hole, the decoration on the rim being impressed. On one lamp's base is stamped the potter's mark (Fig. 4).



Fig. 4. Ovoid lamp with large filling-hole.

Lamps of this type are more common in the southern part of Palestine and rare in the north (Rosenthal and Sivan 1978:99). They are a continuation of the Roman discus lamp, but the broken discus forming a larger filling-hole and the ovoid form attest to their later date. They generally appear in the third-fourth centuries. At Hammat Gader their appearance has to be dated to the fourth century. According to Magness (1989:822), this type of lamp originated in the Jerusalem area in the third century and continued in use until the fifth century.

Beit Natif Lamps (Pl. III:1-2)

Two variants of Beit Natif lamps were found at Hammat Gader. One variant has a round body, a large filling-hole and a curving rim. The nozzle is bow-shaped and a narrow ridge extends around its outline; the handle is not pyramid-shaped, as in the typical Beit Natif lamps (Baramki 1936:Pl. X), but rises from the back of the lamp. This handle, in the Beit Natif lamps, is characteristic of the Jezreel Valley area (Sussman 1972:2; Tsori 1973:243, no. 8). One lamp of this type (Fig. 5) was found in the small rectangular pool of Area B (Locus 211) together with the bilanceolate lamps. The nozzle is decorated with a cross, as are many other fragments of this kind found at the site.



Fig. 5. Beit Natif lamp.

The second variant (Pl. III:1) of Beit Natif lamps is represented by a single specimen; it appears to be larger and less well shaped than the first type. It is a broken lamp with a round body and a bow-shaped nozzle decorated with an amphora.

According to Rosenthal and Sivan (1978:105), these lamps made their appearance in the second half of the third century at the latest and continued in use through the fourth, and rare survivals persist into the fifth century.

Elongated Lamps (Pl. IV:1-6; Pl. V:1-4)

A group of 43 elongated lamps was found in an alcove in Area D (Locus 441). Many of these lamps lack soot and were found in groups. It is possible the alcove was a kind of favissa in which the lamps were stored.

The lamps have an elongated, lenticular form, and the base is slightly concave and follows the form of the lamp; the handle is tongue-shaped and projects horizontally but higher than the lamp, and it is generally decorated with three or more lines – the geometric decoration differs on every single lamp (Fig. 6). The lamps are mold-made and the decoration is thus in relief on the rim. The material consists of orange, poorly-fired and red-slipped clay. The more frequent motifs are: dots, herring-bones, oblique impressions, a radial pattern, circles, etc. The nozzles of some lamps featured the Christian cross.

Lamps of the same type were found in the pool of Area B (Locus 211), together with the bilanceolate lamps dated, as we have seen, to the end of the fourth and the mid-fifth centuries. It is possible that the lamps made their first appearance in the mid-fifth century while their distribution continued during the sixth century. They are found sporadically in northern Palestine but are more common in Transjordan.

At Beth Shean, according to Fitzgerald (1931:Pl. XXXVI, nos. 17-19), some of these lamps were found together with bilanceolate lamps. At Capernaum only one lamp of this type was discovered, however, the archaeological context is not clear (Loffreda 1974:Fig. 28:9, Phot. 26:8, Typ. L8).

At Kh. Kilia in Samaria one specimen was found in a tomb together with a candlestick lamp, and the excavator gives a sixth-century date (Magen 1990:323).

At Abila one specimen was found and the excavator dated it to the fourth-sixth centuries (Mare 1985:Fig. 11:2), although the appearance of the lamp beside a candlestick lamp points to a sixth-century date (Fuller 1987).

The largest number of lamps of this type was found at Pella. According to Smith (1973:218-219, Pls. 63-83), they occur in a tomb together with the bilanceolate lamps. Hennessey (1982:Pl. 132) found them together with the bilanceolate lamp at Pella, in a tomb (Tomb 39a) in Area IV, and he dates them to the late fourth century.



Fig. 6. Elongated lamps.

The distribution of the lamps seems to indicate that they originated in Transjordan and from there reached the north of Palestine.

Many specimens were found at the Hammat Gader baths, not only in the alcove in Area D but also in every pool. Only the typical examples with different decorations will be described in the catalogue. We will not specify the exact parallels for every lamp because of the great variety of the patterns.

Pentagonal Lamps (Fig. 7; Pl. V:5-6)

Two lamps seem to be typologically linked to the elongated ones, though their form and decoration are different. They are pentagonal in form, the base is flat, and the triangular handle rises from the back. They are decorated with geometrical patterns of lines and squares.

The flat base, the elongated form and the orange, red-slipped clay of the lamps remind us of the elongated type. Loffreda (1989:139, Fig. 14:1, 3) presents two lamps of this kind with Greek inscriptions. One of them was found at Kh. Sumra in Transjordan; the date is generally indicated as Byzantine.



Fig. 7. Pentagonal lamps.

According to Sussman (1980:81), this kind of lamp originated in Transjordan and is dated around the sixth century. It is possibly a later development of the elongated lamps.

Round Lamps with Bow-shaped Nozzle
(Fig. 8; Pl. III:4)

These lamps have a round body and a spatulate nozzle. The filling-hole is large and the lamp has a knob handle. According to Sussman (1988:no. 36), the form of these lamps recalls that of the lamps of the coastal area; the difference is that this kind of lamp has a larger filling-hole; its distribution is in particular in the northern part of Palestine and in Transjordan, and it occurs from the mid-fourth until the fifth century.

At Hammat Gader an example was found in the alcove (Locus 441) of Area D, together with the elongated lamps. At Capernaum, in Locus 119, many lamps of this kind were revealed. Since all of them lack soot marks, the excavator suggests the existence of a lamp shop in this locality. According to Loffreda (1974), the first appearance of the lamps at Capernaum is to be dated to the fifth century, even though they were also present in large quantities during the fifth and sixth centuries.

Tzori (1966:123-124, Pl. 9:b) dated the lamps at Beth Shean to the third-fourth centuries, but this seems to us to be too early a date. Smith (1973:Pl. 63) dates the lamps at Pella to the fourth century because of their appearance together with bilanceolate lamps in Tomb 5 dated to the fourth-sixth centuries. This date seems to be pertinent to the Hammat Gader context.



Fig. 8. Round lamp with bow-shaped nozzle.

Round Lamps (Pl. III:3)

Only one example of these lamps was found at Hammat Gader, in a mixed context in the large pool in Area A (Locus 101). It has a round body and an elongated nozzle with a very characteristic decoration of a square within a larger one. According to Sellers and Baramki (1953:41, Typ. X), this type of lamp should be dated from the fourth to sixth centuries.

At Beth Shean the date is generally indicated as pre-seventh-century Byzantine (Fitzgerald 1931: Pl. XXXVI). At Pella round lamps appear together with bilanceolate lamps in Tomb 39A which dates from the second half of the third century to the third quarter of the fourth century (Smith 1982:97, Pl. 137:5).

Israeli and Avidah (1989) date these lamps to the fourth-fifth centuries; this date seems to conform with the Hammat Gader context.

Candlestick Lamps (Fig. 9; Pl. III:5-6)

Only two lamps of this type were found at Hammat Gader. These lamps are characteristic of the Judean Hills around Jerusalem, but they are found sporadically in all parts of Palestine.

The lamps have a pear-shaped form and a base-ring. The upper part is usually decorated with a radial pattern around the rim and a palm branch decoration on the nozzle (Magness 1989:923). Sometimes there are Greek inscriptions on the rim but these are not characteristic of this area (Loffreda 1989).

According to Nitowski (1974:18), followed by Rosenthal and Sivan (1978:116), the lamps first appeared in the early fifth century and continued in use until the early eighth century. Magness (1989:839) questions this dating and, on the basis of excavations in Jerusalem, demonstrates the appearance of this type only in the sixth century.

At Hammat Gader the lamps were found in a mixed context which prevents us from specifying the exact date.

Jerash Lamps (Fig. 10; Pl. VI:4-6)

The Jerash lamps are characterized by high curved handles ending in hand-formed zoomorphic heads. They are termed "Jerash lamps" on account of their abundance at that site, where a lamp mold of this type was found.

According to Scholl (1986:163), lamps of this type were produced from the end of the sixth century to the mid-ninth century. At Jerash they are found together with Umayyad pottery and Islamic lamps (Zayadine 1986:Pl. XIX). At Pella they are generally dated to the Umayyad period (Smith 1989: Fig. 55:II).

This type of lamp is rare in Palestine and restricted to the northern regions. This fact supports the view that the lamps were produced in Transjordan, probably in Jerash.

At Hammat Gader some examples of this type were found in a mixed context together with Byzantine, Umayyad and Abbasid ceramics.



Fig. 9. Candlestick lamp.

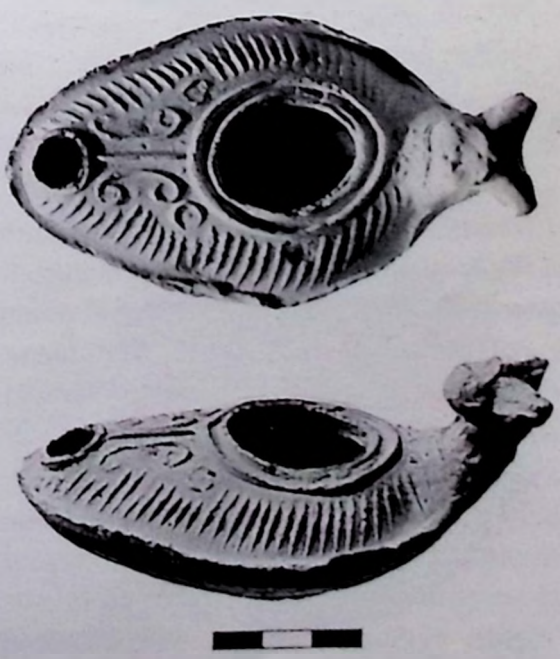


Fig. 10. Jerash lamp.

Northern Lamps (Pl. VII:1-4)

This group belongs to a characteristic kind of lamp with stamped decoration, distributed in the north of Palestine. Sussman (1989) deals with their chronological development and geographical distribution. The lamps of Hammat Gader seem to be later specimens of this type (Sussman 1989:54, Typ. 8), characterized by a piriform body, a shallow channel between the filling-hole and the nozzle, and shallow relief decoration. The Hammat Gader lamps are decorated with various patterns such as circles and rosettes.

One lamp (Fig. 11) is decorated on the rim with geometric patterns of rhomboids and also features a bird-like motif. This lamp seems to be a later specimen of this type of lamp which, according to Sussman (1989:54), is to be dated to the sixth-seventh centuries. The same date has been given to very similar lamps found at Beth Shearim (Avigad 1976:192).



Fig. 11. Northern lamp.

Lamps Decorated with a Linear Pattern (Fig. 12; Pl. VI:1-2)

Many fragments and several intact specimens of lamps decorated with a linear pattern were found at Hammat Gader. These lamps are oval pointed in form and decorated with closely-set linear patterns; on the nozzle there is a shallow channel, and the filling-hole is horseshoe-shaped.

These lamps are widely distributed only in the northern part of Palestine. According to Rosenthal and Sivan (1978:137), they made their appearance in the seventh century and continued in use until the eighth century. Kennedy (1963:Typ. 53-54) dates them to the seventh-ninth centuries.

Avigad (1976:193) ascribes them to the late seventh century. Sussman (1988:102) dates lamps of this kind at Tell Abu-Shusha to the seventh-eighth centuries. At Hammat Gader a seventh-eighth-century dating seems to be appropriate; in fact, the lamps appear together with the early Islamic lamps.



Fig. 12. Lamp decorated with linear pattern.

Islamic Lamps (Pls. VII:5-6; VIII, IX, X, XI)

A large number of Islamic lamps were found at Hammat Gader but it is very difficult to define their exact chronology because of the mixed context in which they were found. These Islamic lamps can be divided into two groups:

I. ovoid pointed lamps with a channel on the nozzle and a conical knob handle (Fig. 13);

II. ovoid pointed lamps with a high tongue handle rising from the outline of the rim (Fig. 14).

Geometrical and vegetal patterns decorate the rim of the lamps.

Many studies were conducted on the Islamic lamps that were found throughout Palestine, but nobody has ever defined their exact chronology. According to Rosenthal and Sivan (1978:129-130), this lamp type has two variants:

variant A – lamps with a conical knob handle and base-ring;

variant B – lamps with a high tongue handle and a flat base.

Variant A is earlier than variant B.

At Khirbet Mefjer both variants were found. The first is dated to the phase of the palace's construction in the years 724-743, prior to the earthquake that occurred in the mid-eighth century; the second variant is associated with



Fig. 13. Islamic lamps with a conical knob handle.

the last phase of occupation (Baramki 1944: 103).

At Jerash only variant B occurs and is dated to the Abbasid period (Zayadine,1986:135). At Ramle only the second type was found, in an eighth-century context (Rosen-Ayalon 1969).

At Beth-Shearim variant A is dated to the seventh-eighth centuries, and variant B to the eighth-ninth centuries, but these datings are based on parallels with other excavations and not on stratigraphic data (Avigad 1976:193).

Waagé (1941:61-68), at Antioch, points to the sixth century as the earliest date, but this seems to be much too early.

In the last phase of Pella (650-750) there is a total absence of this kind of lamp, even of variant A. At Fustat, according to Kubiak (1970:5), variant B is present from the ninth to eleventh centuries, but he adds that there is no proof that such lamps were not in use prior to the ninth century.

Day (1942:79) has suggested an earlier Umayyad date for variant A, and an Umayyad-Abbasid date for variant B.

Both variants were found at Capernaum but their dates are not specified (Loffreda 1979:187-188). However, it seems the site was abandoned after the ninth century.

At Hammat Gader the two variants correspond to Rosenthal and Sivan's variants A and B. Both occur in the same context and it is thus impossible to specify the exact chronological development.

The decoration of the lamps is of the same type in both variants: geometrical designs, linear patterns, circles, guilloche, grids. One specimen with the high tongue handle is decorated with



Fig. 14. Islamic lamp with a tongue-shaped handle.

grapes within medallions formed by vine scrolls. This decoration is typical of Abbasid lamps with a high tongue handle.

These lamps were found throughout Palestine and Transjordan and are not restricted to a specific area.

Later Islamic Lamps (Pl. IX)

This group of lamps consists of the later specimens found at Hammat Gader. They cover a period from the eleventh to the fourteenth centuries.

Though, according to Muqadassi,[7] the baths were no longer in use in the tenth century, it seems that people visited the site sporadically and the small number of the lamps from this period may attest to these visits. Some of these lamps were found together with the earlier Islamic lamps.

Five examples of lamps were found and all of them are wheel-made. Three of them (cat. nos. 57, 59, 60) are of the same type (Fig. 15). They are made up of two parts that were joined together. A round top was placed above an open saucer which forms the sides and bottom of the lamp.

Two specimens are unglazed and one is yellow-glazed with a slip-painted decoration and has a raised neck at the top. According to Kennedy (1963:91), the unglazed lamps should be dated to the eleventh to twelfth centuries. Brooneer (1930: no. 1530) dates them no earlier than the tenth century. The glazed lamp with the raised neck can be dated to the thirteenth to fifteenth centuries (Kubiak 1970:15).

Another specimen, very similar to the above, is a wheel-made lamp with a flat body and a large filling-hole in the middle. The handle is broken but it is thought to have formed a loop extending from the filling-hole to the back of the lamp. It is unglazed and is dated to the later Abbasid-Fatimid periods (Rosenthal and Sivan 1978: 152).

The later specimen consists of a wheel-made lamp with a circular reservoir, a projecting hand-



Fig. 15. Later Islamic lamps.

formed nozzle and a loop handle. The lamp is ochre-glazed.

NOTES

* Since the writing of this chapter in 1992, many publications have appeared that could enhance our conclusions regarding the parallels and dating of the Hammat Gader oil lamps. See Haddad 1991 for the most recent comprehensive study on oil lamps in the northern region of Palestine.

1. See Chapter 3.
2. Sozomenos, *Historia Ecclesiastica*, *PG* 67, col. 943.
3. *Itinerarium Antonini Placentini*, *CCSL* 178-179. The text of Antoninus mentions the custom of Jews offering oil lamps and coins at the tombs of Jacob and David at Mambre on the morrow of Nativity Day. He seems to have confused Mambre with Hebron, or perhaps he was referring to a different custom.
4. See a tradition referred to by T. Canaan (1920-21: 153-170), possibly popular in ancient times and still current among Arabs in Palestine, to offer oil lamps or coins to sporadic and hot springs in the belief they are inhabited by demons or spirits.
5. On the custom of placing lamps under pavements, in the foundations of buildings, or in niches, see: Ostrasz 1989:71; Kehrberg 1989:85-97; Reich et al. 1991:25.
6. See Hershkovitz 1987:314-325 for an extensive bibliography.
7. See Le Strange 1890:335-336.

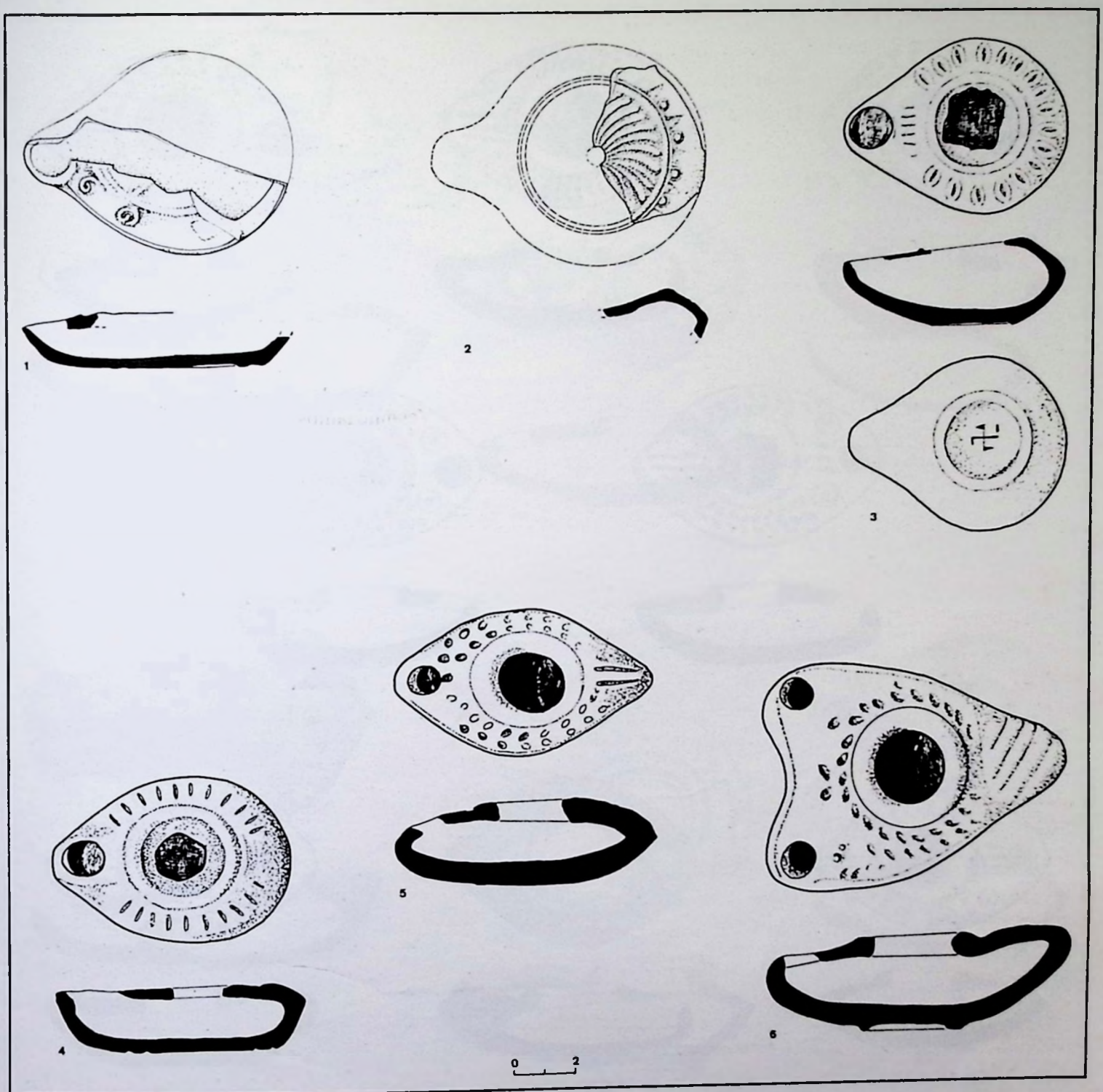


PLATE I

No.	Type	Locus	Cat. No.	Material
1	Roman decorated discus lamp	630	1	buff clay; red slip
2	Roman decorated discus lamp	211	2	buff clay; red slip
3	ovoid lamp with large filling-hole	211	3	orange clay; red slip
4	ovoid lamp with large filling-hole	211	4	orange clay; red slip
5	bilanceolate lamp	211	5	buff clay; reddish-brown slip
6	double-wick lamp	211	6	buff clay; reddish-brown slip

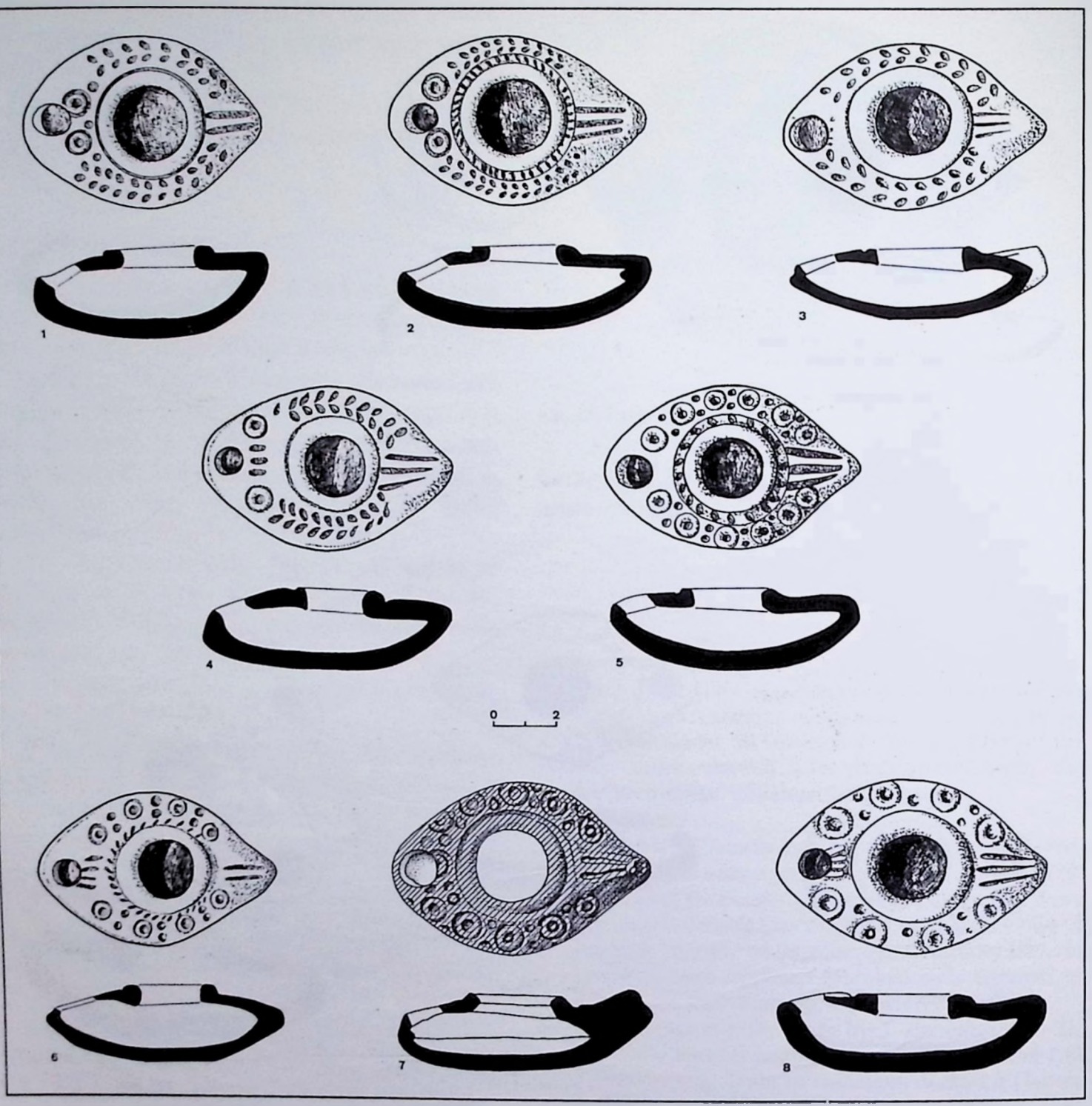


PLATE II

No.	Type	Locus	Cat. No.	Material
1	bilanceolate lamp	211	7	buff clay, reddish-brown slip
2	bilanceolate lamp	211	8	buff clay, reddish-brown slip
3	bilanceolate lamp	211	9	buff clay, reddish-brown slip
4	bilanceolate lamp	211	10	buff clay, reddish-brown slip
5	bilanceolate lamp	211	11	buff clay, reddish-brown slip
6	bilanceolate lamp	211	12	buff clay, reddish-brown slip
7	bilanceolate lamp	211	13	buff clay, reddish-brown slip
8	bilanceolate lamp	211	14	buff clay, reddish-brown slip

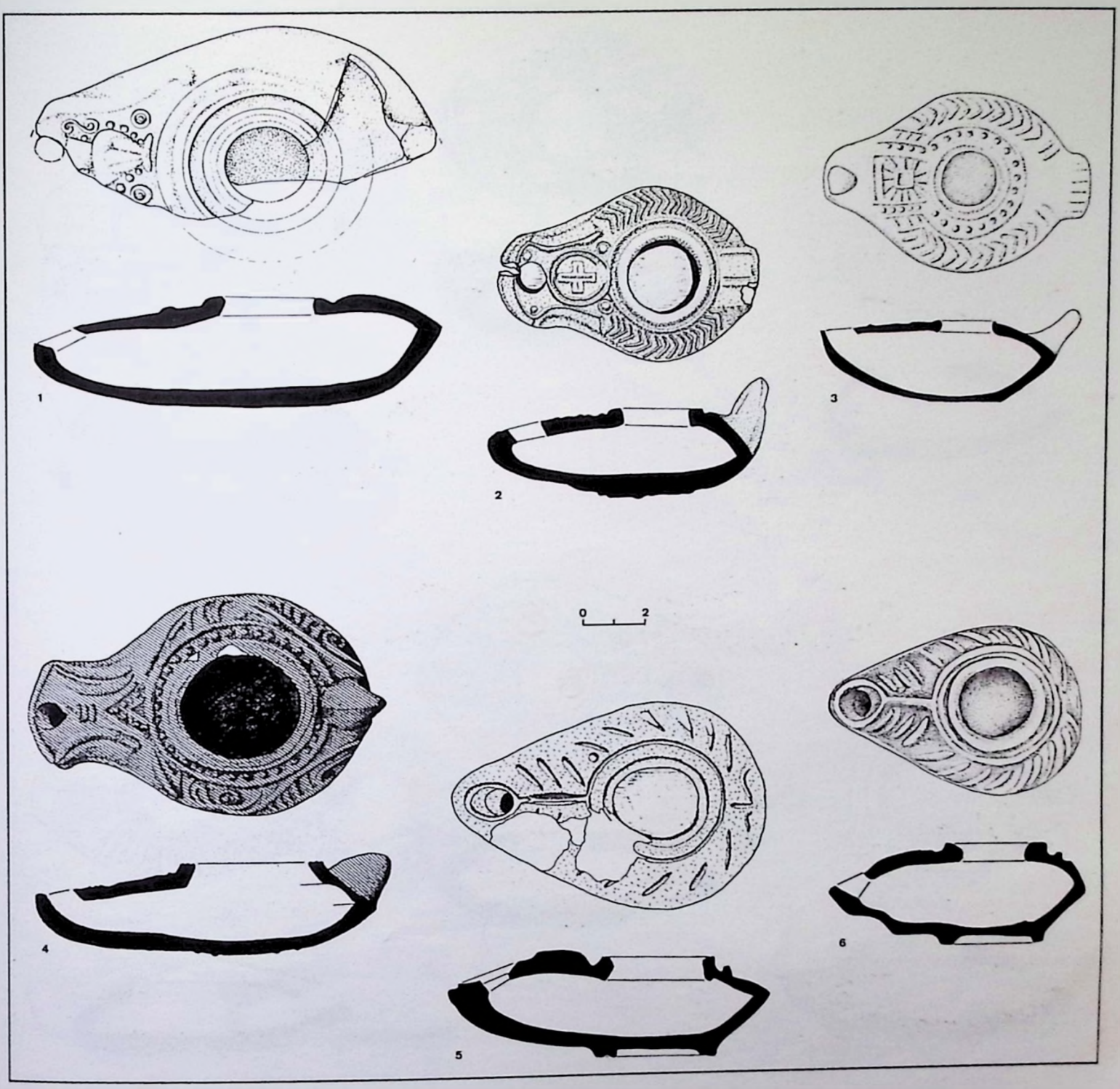


PLATE III

No.	Type	Locus	Cat. No.	Material
1	Beit Natif lamp	506	27	buff clay; orange slip
2	Beit Natif lamp	211	28	orange clay; few traces of reddish slip
3	round lamp	101	29	buff yellowish clay
4	round lamp with spatulate nozzle	441	30	pink clay; reddish slip
5	candlestick lamp	311	31	brownish-gray clay
6	candlestick lamp	327	32	buff pink clay

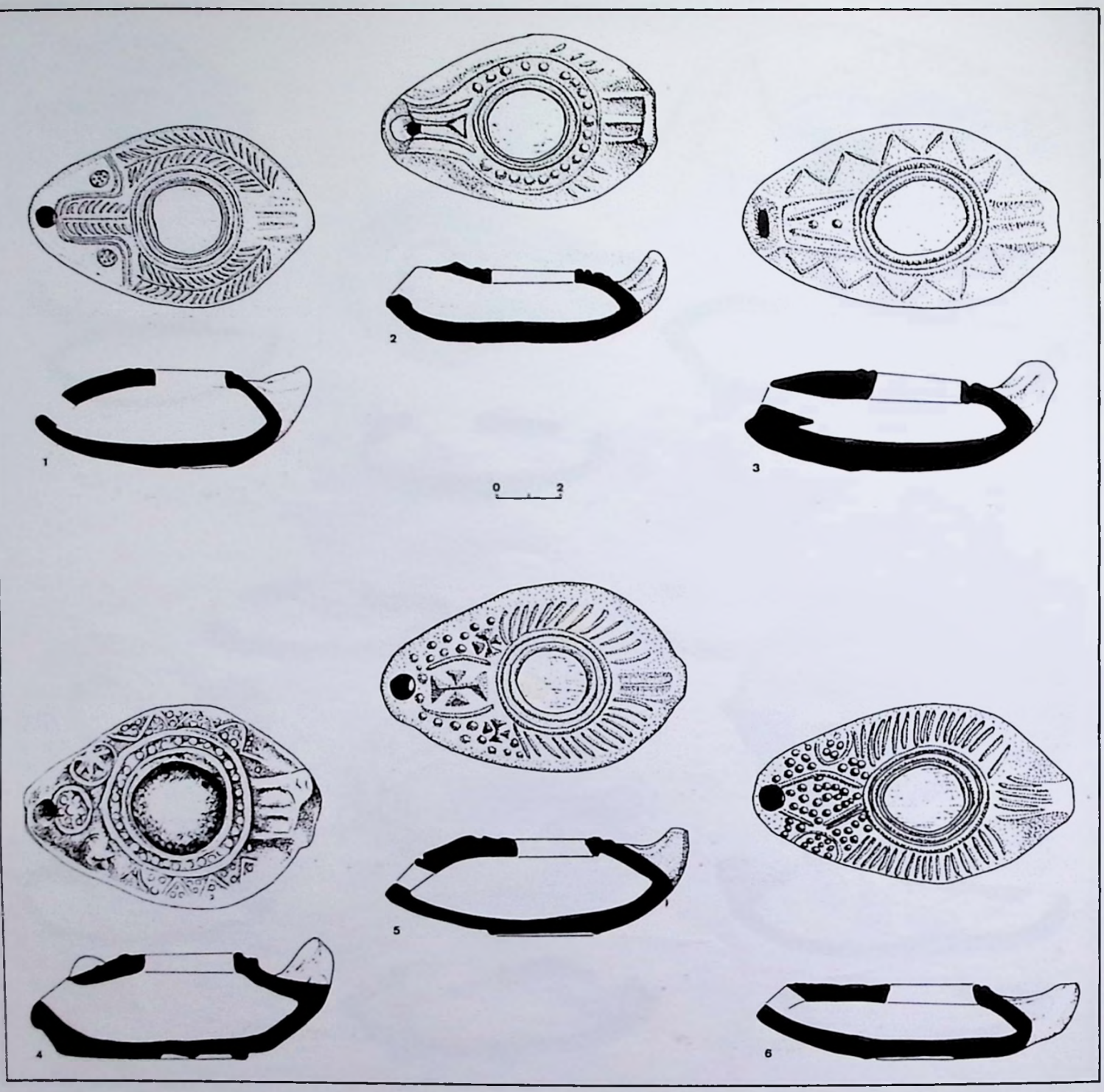


PLATE IV

No.	Type	Locus	Cat. No.	Material
1	pear-shaped elongated lamp	441	15	pink clay, reddish slip
2	pear-shaped elongated lamp	211	16	orange clay, few traces of reddish slip
3	pear-shaped elongated lamp	441	17	pink clay, reddish slip
4	pear-shaped elongated lamp	441	18	orange clay, reddish slip
5	pear-shaped elongated lamp	441	19	orange clay, reddish slip
6	pear-shaped elongated lamp	441	20	orange clay, reddish slip

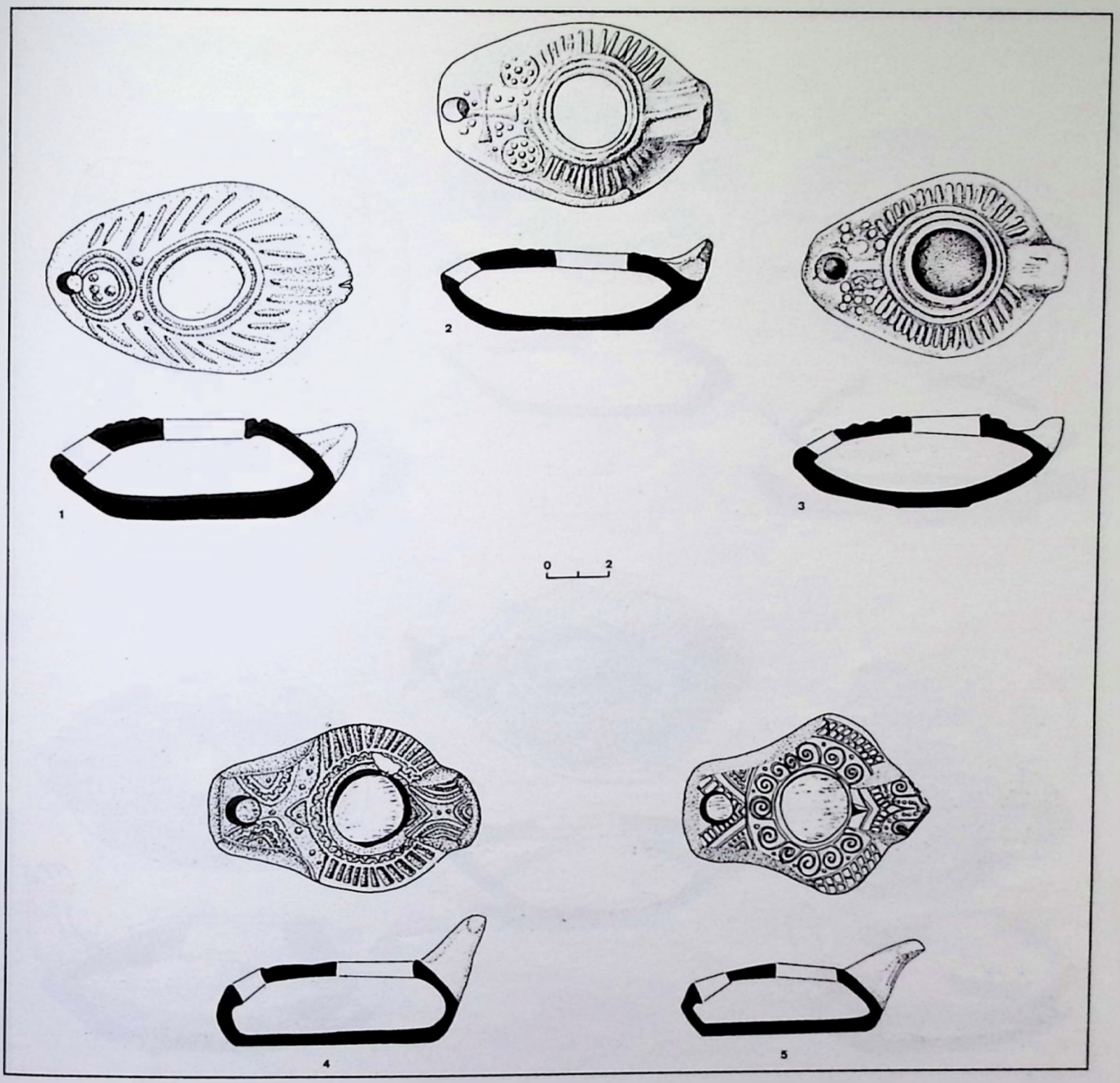


PLATE V

No.	Type	Locus	Cat. No.	Material
1	pear-shaped elongated lamp	441	21	orange clay, traces of red slip
2	pear-shaped elongated lamp	441	22	orange clay, reddish slip
3	pear-shaped elongated lamp	201	23	orange clay, reddish slip
4	pentagonal elongated lamp	312	25	orange clay, reddish slip
5	pentagonal elongated lamp	441	26	orange clay, reddish slip

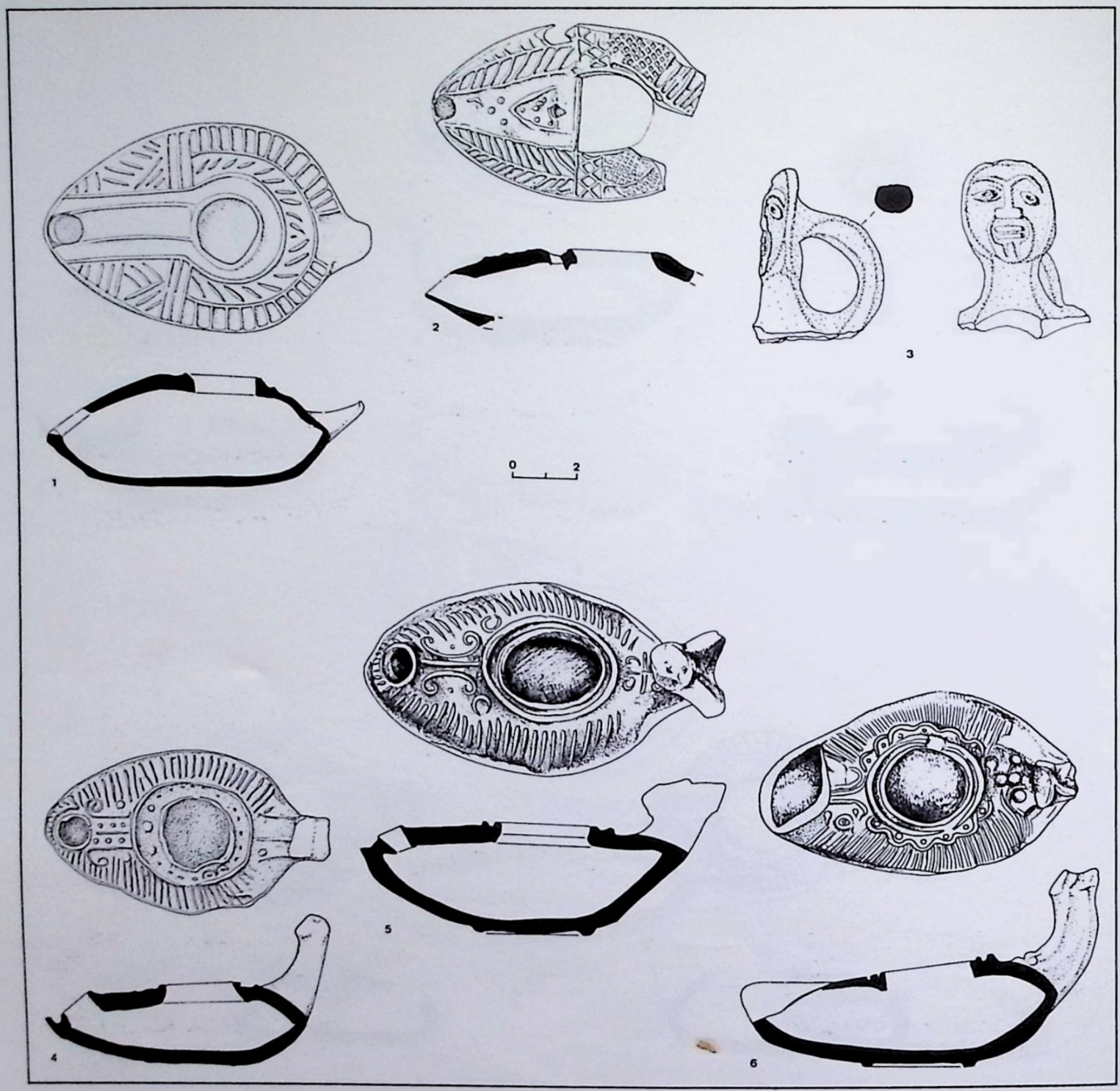


PLATE VI

No	Type	Locus	Cat. No.	Material
1	linear pattern lamp	702	33	brownish-gray clay
2	linear pattern lamp	506	34	buff clay, reddish slip
3	lamp's handle	506	35	buff-pink clay
4	Jerash lamp	315	36	brownish-red clay
5	Jerash lamp	429	37	pink clay
6	Jerash lamp	506	38	red clay, well fired

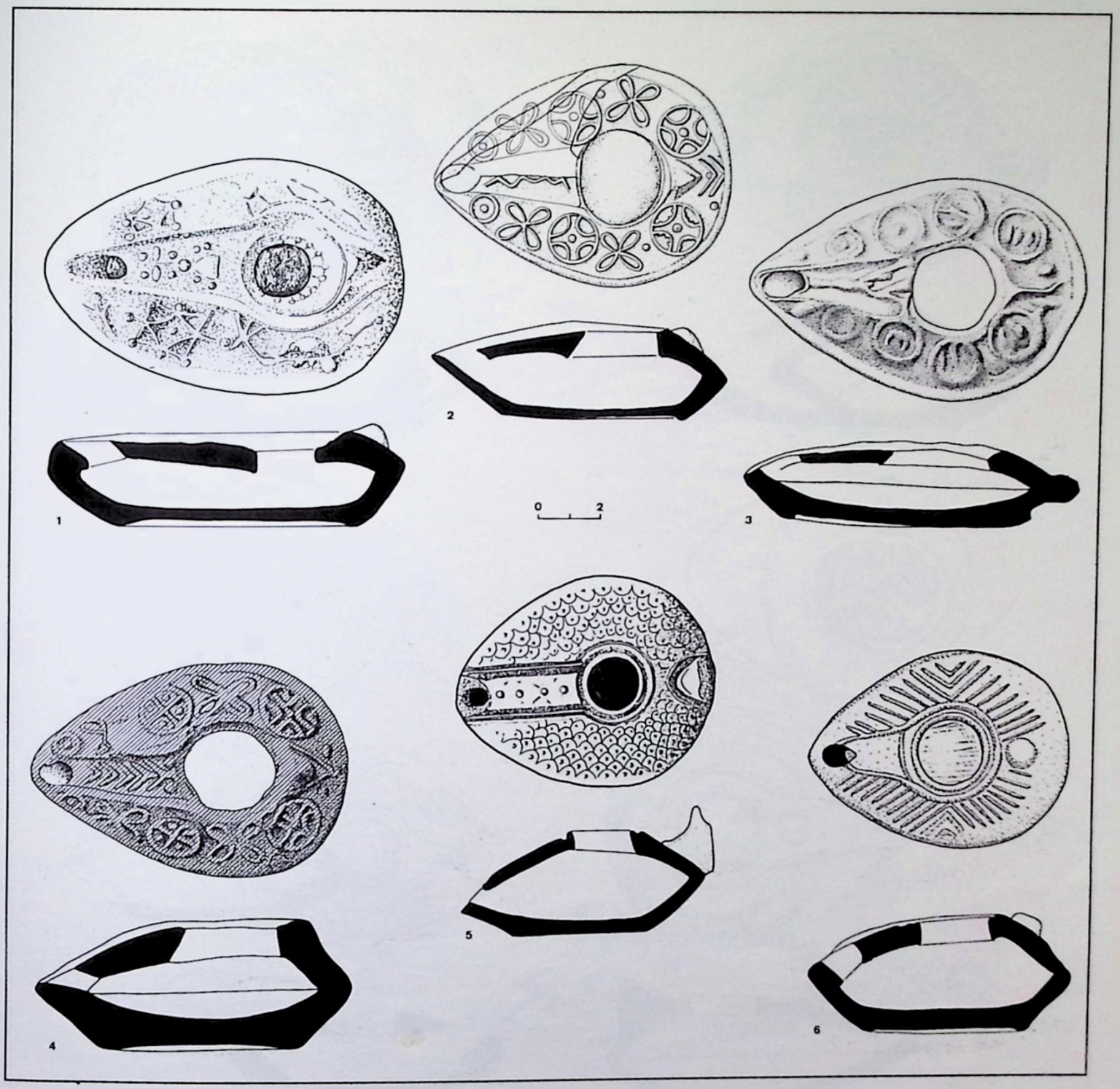


PLATE VII

No.	Type	Locus	Cat. No.	Material
1	northern lamp	101	39	yellowish clay
2	northern lamp	512	40	orange clay
3	northern lamp	512	41	dusky red clay
4	northern lamp	517	42	buff clay, reddish slip
5	Islamic lamp, ovoid pointed	104	43	buff orange clay
6	Islamic lamp	506	44	buff clay, brownish-red slip

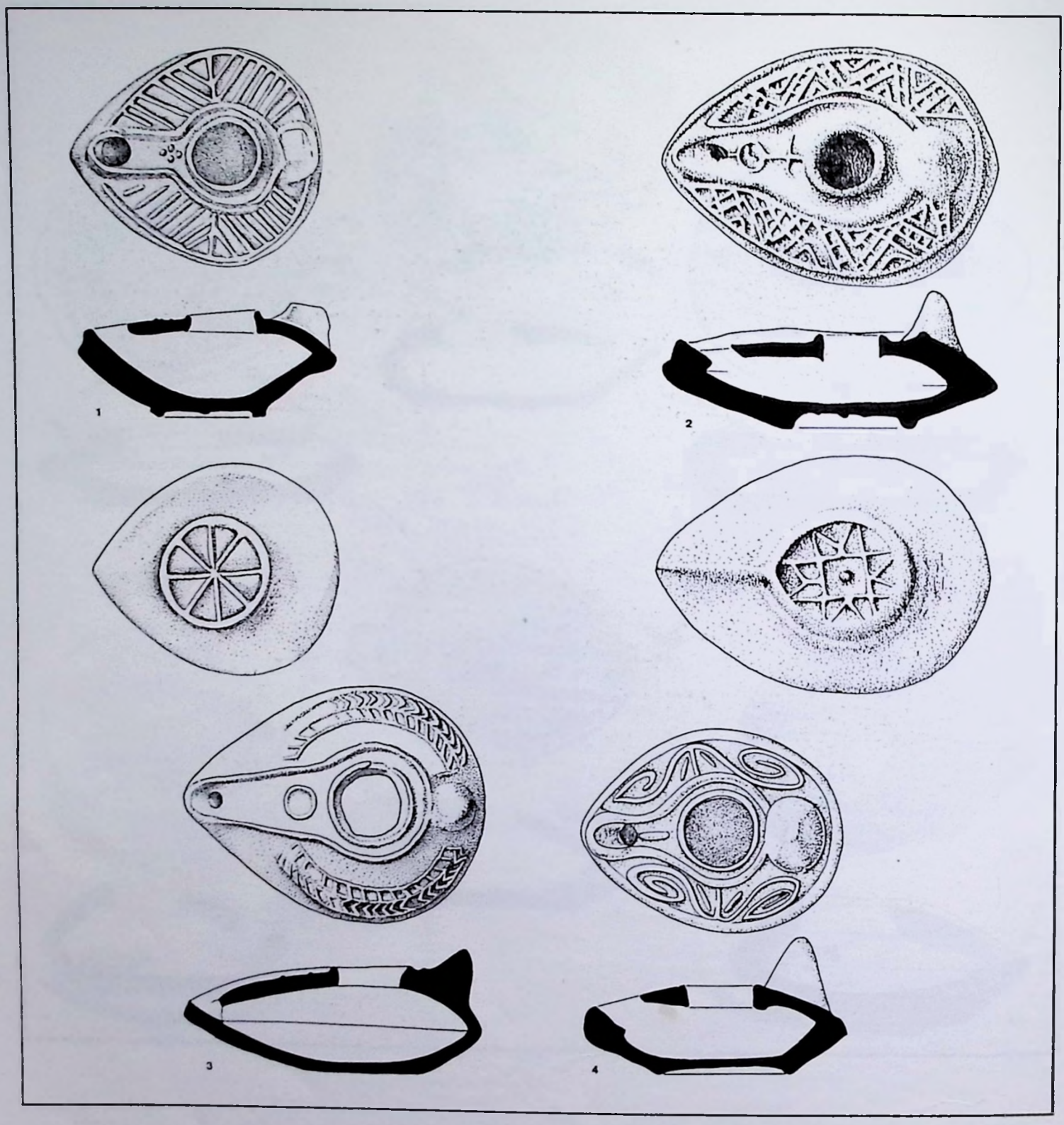


PLATE VIII

No	Type	Locus	Cat. No.	Material
1	Islamic lamp	311	45	buff clay
2	Islamic lamp	425	46	orange clay
3	Islamic lamp	803	47	orange-pink clay
4	Islamic lamp	806	48	buff clay

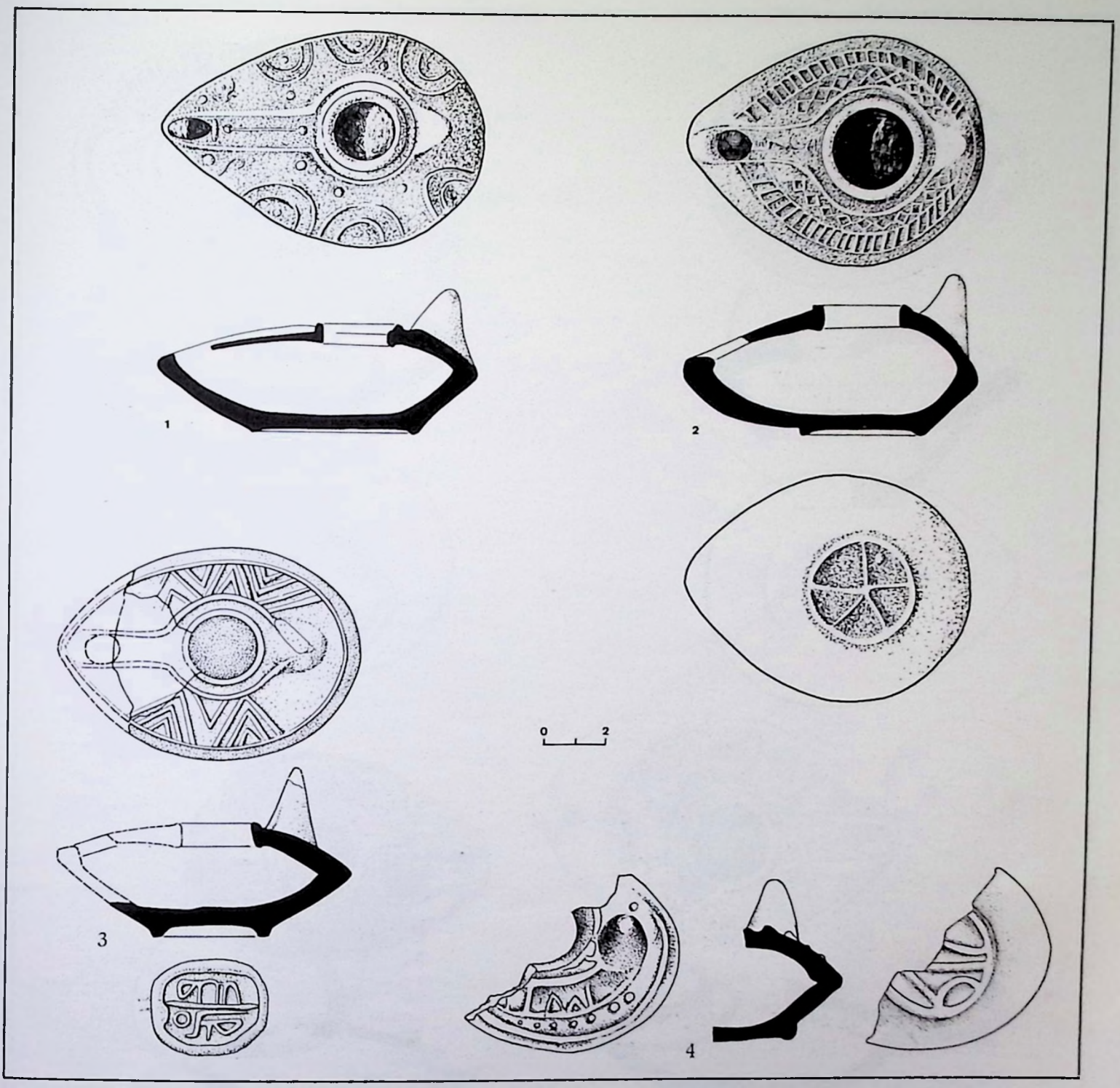


PLATE IX

No.	Type	Locus	Cat. No.	Material
1	Islamic lamp, ovoid pointed, knob handle	201	49	reddish clay
2	Islamic lamp, ovoid pointed, knob handle	302	50	buff clay; reddish slip
3	fragment of Islamic lamp, inscription	510	51	orange clay; well fired
4	fragment of Islamic lamp, potter's mark	302	52	orange clay; well fired

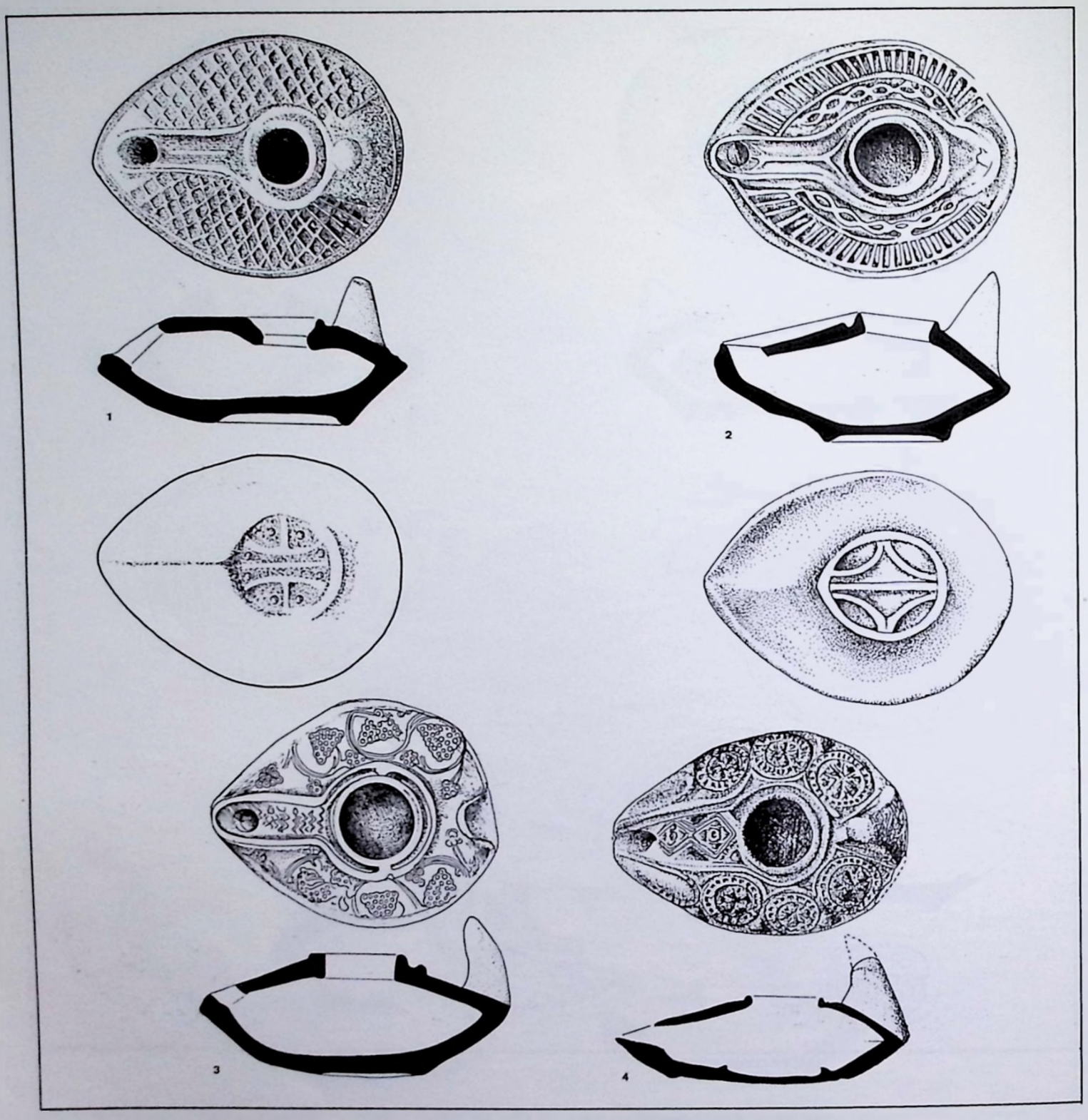


PLATE X

No.	Type	Locus	Cat. No.	Material
1	Islamic lamp, ovoid pointed, knob handle	101	53	buff clay
2	Islamic lamp, ovoid pointed, knob handle	311	54	brownish-red clay
3	Islamic lamp, ovoid pointed, tongue-shaped handle	425	55	yellowish clay
4	Islamic lamp, ovoid pointed, tongue-shaped handle	441	56	yellowish clay

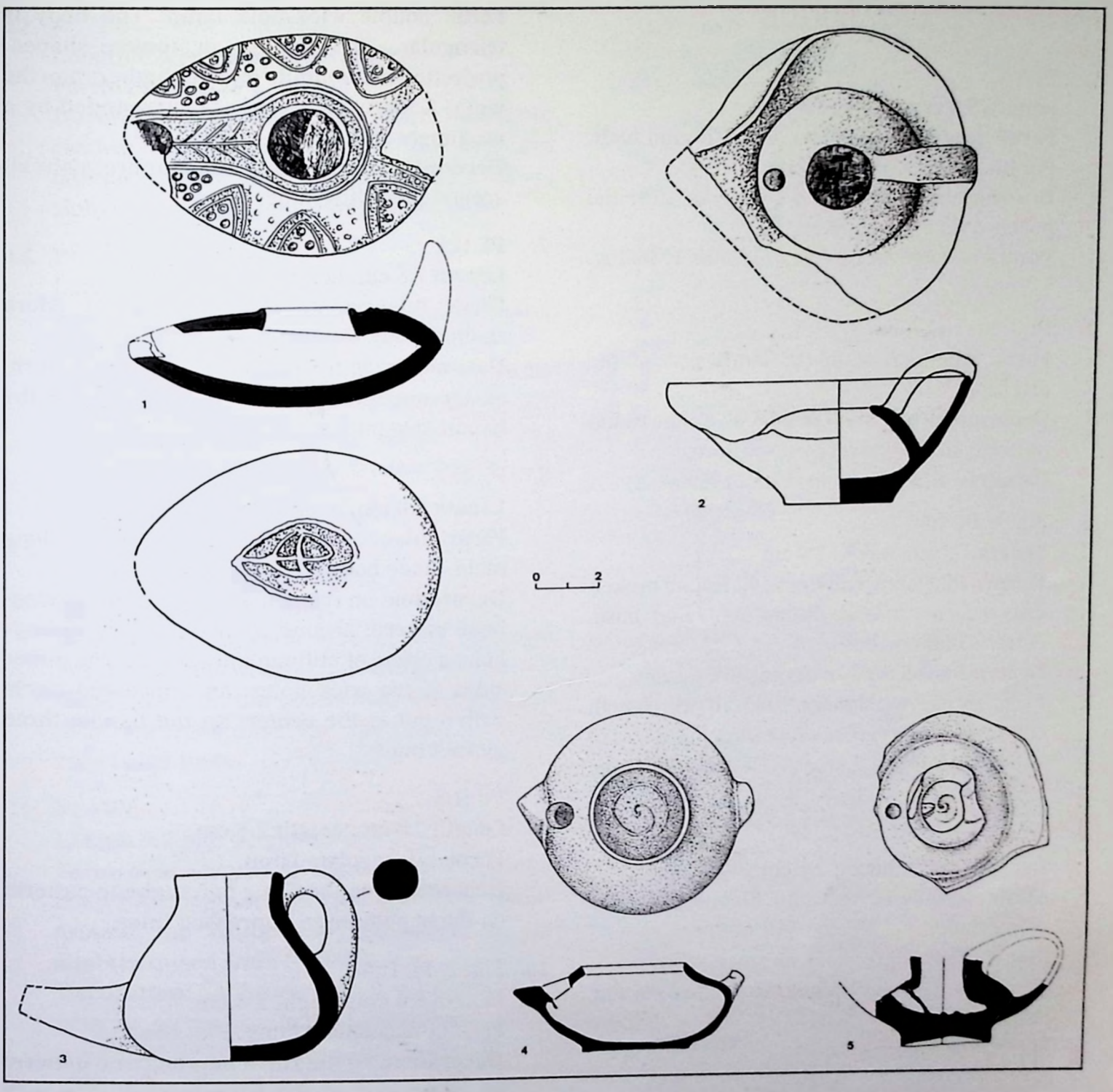


PLATE XI

No.	Type	Locus	Cat. No.	Material
1	Islamic lamp,ovoid pointed, tongue-shaped handle	104	57	yellowish clay
2	wheel-made lamp	104	58	buff clay
3	wheel-made lamp	200	59	buff clay, ochre-glazed
4	wheel-made lamp	512	60	buff clay
5	wheel-made lamp	201	61	red clay, yellow-glazed slip-painted decoration

CATALOGUE

1. Pl. I:1
Length 8.0 cm; height 1.8 cm.
Form: fragment of discus lamp. Round body, flat base, short round nozzle.
Decoration: on the rim a double ax, near the nozzle a double volute.
Parallels: Lehavot Haviva (Sussman 1986: Fig. 77, no. 1)

2. Pl. I:2
Form: fragment of discus lamp, part of the discus.
Decoration: on the discus a close radial pattern; on the rim an ovulo pattern.
Parallels: Rosh-Ha'ayin (Eitan 1969:64, 4).

3. Fig. 4; Pl. I:3
Length 7.3 cm; height 2.9 cm.
Form: ovoid lamp with flat body. Round broken discus forms a large filling-hole. Flat base. Potter's mark on base.
Decoration: shallow ovulo pattern on rim.
Parallels: Geva (Sussman 1986:No. 53 – fourth century); Samaria (Crowfoot 1957:Fig. 88, n. 10 – third century); Lehavot Haviva (Sussman 1986:Fig. 79, no. 23).

4. Pl. I:4
Length 7.0 cm; height 2.1 cm.
Form: elongated ovoid lamp. Flat body. Broken filling-hole.
Decoration: impressions on rim.
Parallels : Lehavot Haviva (Sussman 1986:Fig. 80, no. 31).

5. Pl. I:5
Length 8.3 cm; height 2.7 cm.
Form: bilanceolate lamp. Flat, small, oblong mold-made body. Incorporated nozzle. Tongue-shaped handle projecting horizontally and not higher than the lamp. Large filling-hole surrounded by a prominent ridge. Flat base.
Decoration: on the rim a degenerate herringbone pattern; on the handle two impressed lines.

6. Figs. 1, 3; Pl. I:6
Length 10.2 cm; height 3.1 cm.
Form: double wick-hole lamp. The body is triangular. The handle is tongue-shaped, projecting horizontally and not higher than the lamp. A large filling-hole is surrounded by a prominent ridge. Base-ring.
Decoration: on the rim oblique impressions all around the filling-hole.

7. Pl. II:1
Length 7.5 cm; height 2.8 cm.
Form: bilanceolate lamp like no. 4. More shallow body. Convex base.
Decoration: on the rim a herringbone pattern; on the nozzle two circles within dots; on the handle two impressed lines.

8. Pl. II:2
Length 8.0 cm; height 2.8 cm.
Form: bilanceolate lamp. Flat, small, oblong mold-made body. Like no. 7.
Decoration: on the rim an impressed herringbone pattern; around the ridge of the filling-hole, a circle of oblique impressions; on either sides of the wick-holes, an impressed circle with a dot at the center; on the handle three incised lines.

9. Pl. II:3
Length 7.8 cm; height 2.5 cm.
Form: bilanceolate lamp.
Decoration: on the rim a herringbone pattern; on the handle three impressed lines.

10. Fig. 2; Pl. II:4
Length 8.0 cm; height 2.6 cm.
Form: bilanceolate lamp. Flat base.
Decoration: on the rim a herringbone pattern; on either side of the wick-hole, circles with dots at center; on the nozzle three straight impressions; on the handle three impressed lines.

11. Pl. II:5
Length 7.5 cm; height 2.6 cm.
Form: bilanceolate lamp.
Decoration: on each side of the rim six dots within circles, alternating with a couple of impressed dots; around the ridge of the wick-hole oblique impressions; on the handle three impressed lines.

12. Pl. II:6
Length 8.0 cm; height 2.5 cm.
Form: bilanceolate lamp.
Decoration: on each side four impressed circles; around the ridge of the wick-hole oblique impessions; on the nozzle four impressions; on the handle two impressed lines.

13. Pl. II:7
Length 8.4 cm; height 2.4 cm.
Form: bilanceolate lamp. The handle is slightly raised.
Decoration: on each side of the rim five impressed dots within circles, alternating with a couple of dots; on the nozzle near the wick-hole, a semicircle; on the handle two impressed lines.

14. Pl. II:8
Length 8.1 cm; height 2.5 cm.
Form: bilanceolate lamp.
Decoration: on each side of the rim four impressed dots within circles, alternating with simple dots; on the nozzle near the wick-hole, four impressions; on the handle three impressed lines.

15. Pl. IV:1
Length 9.2 cm; height 3.1 cm.
Form: pear-shaped elongated lamp. Lenticular body. Biconical section. Flat base. Three ridges around the filling-hole. Projecting handle slightly raised from the back.
Decoration: on the rim a shallow herringbone pattern; on the nozzle the herringbone pattern is flanked by two circles filled by dots.

16. Fig. 6; Pl. IV:2
Length 8.7 cm; height 2.4 cm.
Form: pear-shaped elongated lamp. Lenticular, flat body. Flat base.
Decoration: around the filling-hole two ridges and a circle of dots; on the rim a ridge surrounds the circle of dots and continues onto the nozzle.

17. Pl. IV:3
Length 9.3 cm; height 3.1 cm.
Form: pear-shaped lamp. Around the filling-hole two ridges.
Decoration: on the rim a shallow decoration of a zigzag pattern; on the nozzle two dots and a V-pattern; on the handle three incised lines.

18. Fig. 6; Pl. IV:4
Length 9.7 cm; height 3.4 cm.
Form: pear-shaped elongated lamp. Biconical section. Raised handle.
Decoration: on the rim zigzag pattern decorated with dots; the filling-hole is surrounded by a circle of dots and by a ridge; on the nozzle a circle filled by dots flanked by two stars.

19. Pl. IV:5
Length 9.6 cm; height 3.2 cm.
Form: pear-shaped elongated lamp. Two ridges around the filling-hole.
Decoration: on the rim a radial pattern; on the nozzle a cross flanked by sporadic dots and two small crosses.

20. Pl. IV:6
Length 9.5 cm; height 2.4 cm.
Form: pear-shaped elongated lamp. Lenticular, flat body. Flat base, raised handle. Around the filling-hole three ridges.
Decoration: on the rim a radial pattern; on the handle six vertical lines; the nozzle is decorated with dots and a lozenge flanked by two semicircles.

21. Pl. V:1
Length 9.0 cm; height 3.4 cm.
Form: pear-shaped elongated lamp, similar to no. 18. Two ridges around the filling-hole.
Decoration: on the rim a radial pattern; the nozzle is decorated with dots and two concentric circles joining the wick-hole.

22. Fig. 6; Pl. V:2
Length 9.0 cm; height 2.8 cm.
Form: elongated pear-shaped lamp. Lenticular, flat body. Raised handle. Flat base. Three ridges around the filling-hole.
Decoration: on the rim a radial pattern; on the nozzle a cross flanked by two circles filled with dots.

23. Pl. V:3
Length 8.5 cm; height 3.1 cm.
Form: pear-shaped elongated lamp, similar to

no. 14. Three ridges around the filling-hole.
Decoration: on the rim a radial pattern; on the nozzle dots.

24. Fig. 6; Pl. V:4
Length 9.2 cm; height 3.2 cm.
Form: pear-shaped elongated lamp.
Decoration: on the rim branches with dots; around the filling-hole a ridge; on the nozzle a cross and four dots.

25. Fig. 7; Pl. V:5
Length 8.2 cm; height 2.8 cm.
Form: round body, slightly spatulate nozzle. Raised handle. A ridge around the filling-hole.
Decoration: around the rim a close radial pattern; the handle is decorated by lines and dots; the wick-hole is flanked by two decorated triangles.

26. Fig. 7; Pl. V:5
Length 8.2 cm; height 2.4 cm.
Form: pentagonal lamp. Raised triangular handle. The nozzle is slightly spatulate.
Decoration: on the rim grids of squares; around the filling-hole a ridge and a wave pattern; the nozzle is decorated with bands of lines; the handle is decorated with two volutes and dots.
Parallels: Kh. Sumra (Loffreda 1989:139, Fig. 14:1, 3).

27. Pl. III:1
Length 12.3 cm; height 3.8 cm.
Form: Beit Natif lamp. The lamp is broken. Only half of the body and the nozzle survived. Round body. Broad bow-shaped nozzle, outlined by a narrow ridge, pinched on its sides and giving the effects of volutes. Four ridges around the filling-hole.
Decoration: on the nozzle an amphora is flanked by a row of dots and two pellets.
Parallels: Rosenthal 1978, no. 439; Kennedy 1963, no.597; Beth Shean (Fitzgerald 1931:Pl. XXXVI:5); Pella (Smith 1973:Pl. 63, no. 169).

28. Fig. 5; Pl. III:2
Length 8.4 cm; height 3.0 cm.
Form: Beit Natif lamp. The lamp has a round body, a large filling-hole, and a curving rim. The bow-shaped nozzle is wide and a narrow ridge extends around its outline. The handle is raised.
Decoration: on the rim a herringbone pattern; the filling-hole is surrounded by a wide and a narrow ridge; the nozzle is decorated with a double circle containing a Greek cross in its center; the four extremities of the nozzle are pointed with pellets.
Parallels: Beth Shean (Sussman 1972:3).

29. Pl. III:3
Length 8.6 cm; height 2.7 cm.
Form: round-bodied lamp with elongated nozzle and raised handle. Flat base.
Decoration: on the rim a shallow herringbone pattern; on the nozzle a square enclosing another small one.
Parallels: Sellers and Baramki 1953; Israeli and Avida 1988:317 (fourth-fifth centuries); Beth Shean (Fitzgerald 1931:Pl. XXXVI, no. 13); Pella (Smith 1982:Pl. 137:5 – fourth century).

30. Fig. 8; Pl. III:4
Length 10.0 cm; height 3.0 cm.
Form: round body, flat base, spatulate nozzle outlined by a narrow ridge. Large filling-hole, knob handle.
Decoration: on the rim a geometric pattern of lines and dots; around the filling-hole a wide and a narrow ridge and between them a row of dots in circle; on the nozzle triangles and dots.
Parallels: Rosenthal 1978:No. 519; Pella (Smith 1973:Pl. 63, n. 186 – fourth century); Capernaum (Loffreda 1974:L6, Fot. 26:1-3 – fourth-fifth centuries); Geva (Sussman 1988: No. 36 – fourth-fifth centuries); Beth Shean (Zori 1966:Pl. 9b – third-fourth centuries).

31. Pl. III:5
Length 10.2 cm; height 3.4 cm.
Form: candlestick lamp. Part of the nozzle and the rim broken. Pear-shaped body. Biconical section. Base-ring. Two ridges around the filling-hole.
Decoration: shallow radial pattern on the rim; palm branch on the nozzle.
Parallels: Kh. Siyar el-Ghanam (Corbo 1955: Fot. 72:19); Jerusalem (Tzaferis 1974: Fig. 4:12).

32. Fig. 9; Pl. III:6
Length 8.5 cm; height 3.4 cm.
Form: candlestick lamp like no. **31** but smaller.
Decoration: on the rim a close radial pattern; palm branch on the nozzle.
Parallels: Pella (Smith 1989:Pl. 38:f).

33. Fig. 12; Pl. VI:1
Length 8.7 cm.
Form: fragment of oval lamp. Large horseshoe-shaped filling hole. Shallow channel on the nozzle.
Decoration: on the rear half of the rim a grid pattern; on the front half of the rim a herringbone pattern.

34. Pl. VI:2
Length 10.6 cm; height 3.7 cm.
Form: pointed oval shape. Large horseshoe-shaped filling-hole. Knob handle. The filling-hole is surrounded by a ridge which extends onto the nozzle in the form of a shallow channel.
Decoration: on the rim a herringbone pattern; linear pattern on the nozzle.
Parallels: Samaria (Crowfoot 1957:Fig. 89); Caesarea (Adan-Bayewitz 1986:Typ. 2, Ill. 126); Beth Shearim (Avigad 1976:No. 45); Lehavot Haviva (Sussman 1986:Fig. 81, no. 48).

35. Pl. VI:3
Form: loop handle with decorated boss. It seems to be from a wheel-made lamp with a long nozzle imitating bronze lamps.
Decoration: boss decorated as a stylized oval face: the nose is "inverse T-shaped" and is linked with the arched eyebrows; the eyes are almond-shaped, the mouth is formed by two parallel strips; two lines extend from the nose and join together under the mouth, forming what seems to be a beard.
Parallels: The face decoration has no exact parallels; Pella (Smith 1973:Pl. 63:157; 1979: Pl. 50:21); Ramat Rachel (Aharoni 1964:Pl. 26:11-14).

36. Pl. VI:4
Length 9.5 cm; height 2.5 cm.
Form: Jerash lamp. Oblong, pear-shaped. Flat to slightly concave base. Raised handle. Two ridges around the filling-hole.
Decoration: on the rim a close radial pattern; between the ridges, around the filling-hole, a row of dots; on the nozzle two rows of dots flanked by volutes.

37. Fig. 10; Pl. VI:5
Length 9.5 cm; height 3.7 cm.
Form: Like no. **36**.
Decoration: on the rim a close radial pattern; at the base of the handle a Greek cross; zoomorphic handle.
Parallels: Jerash (Scholl 1986:Fig. 1:4); Nebo (Saller 1941:Pl. 143:6).

38. Pl. VI:6
Length 11.0 cm; height 3.5 cm.
Form: Jerash lamp. Oblong lamp. Flat base. Raised handle. Two ridges around the filling-hole. Part of the nozzle broken.
Decoration: on the rim a close radial pattern on the rim; at the base of the handle four dots; around the filling-hole wavy line with dots; on the nozzle two volutes and two pellets.
Parallels: Jerash (Scholl 1986:Fig. 1:6); Pella (Smith 1982:163; 1989:Pl. 55:6).

39. Fig. 11; Pl. VII:1
Length 10.8 cm; height 3.1 cm.
Form: Northern lamp. Pear-shaped. Shallow channel on the nozzle. Knob handle. Oval base-ring.
Decoration: on the rim a relief decoration of geometrical patterns; in the channel on the nozzle dots.
Parallels: Sussman 1989:Typ. 8a.

40. Pl. VII:2
Length 9.5 cm; height 3.1 cm.
Form: Northern lamp. Pointed oval shape. One ridge around the filling-hole extends onto the nozzle. Short knob handle. Part of the rim and the nozzle is broken. Flat base.
Decoratíon: on the rim rosettes alternating with decorated circles.
Parallels: Beth Shearim (Avigad 1976:Pl. LXXI:38).

41. Pl. VII:3
Length 10.9 cm; height 3.5 cm.
Form: like no. **40**, but flatter and longer.

Decoration: on the rim badly-shaped decorated circles.

42. Pl. VII:4
Length 9.5 cm; height 3.5 cm.
Form: Northern lamp. Similar to no. 39.
Decoration: on the rim rosettes alternating with decorated circles.
Parallels: see no. 39.

43. Pl. VII:5
Length 8.5 cm; height 3.4 cm.
Form: Islamic lamp. Oval pointed shape. Flat round base. Knob handle rising from the back of the lamp. Two ridges around the filling-hole, the outer one extending onto the nozzle in the form of a shallow channel. Base-ring. Potter's mark.
Decoration: all over the surface of the lamp a grid of scales; on the channel four dots.
Parallels: Bethany (Saller 1957:No. 27).

44. Fig. 13; Pl. VII:6
Length 8.5 cm; height 4.0 cm.
Form: Islamic lamp. Oval pointed shape. Large filling-hole surrounded by a pronounced ridge and by a second one extending onto the nozzle and around the wick-hole in the form of a straight shallow channel. Conical knob handle. Flat round base. Potter's mark.
Decoration: on the rim and nozzle a geometrical pattern of obliques lines.
Parallels: Kh. Mefjer (Baramki 1944:Pl. XVII, no. 5).

45. Pl. VIII:1
Length 8.5 cm; height 3.6 cm.
Form: Islamic lamp. Oval pointed body. Knob handle broken. Around filling-hole two ridges: the outer one extends to nozzle, forming a shallow channel. Base-ring. Potter's mark.
Decoration: oblique lines on rim and nozzle.
Parallels: Saller 1941:Pl. 143:15.

46. Pl. VIII:2
Length 105 cm; height 3.3 cm.
Form: Islamic lamp, like no. 45. Knob handle. Channel circles filling-hole. Base ring. Potter's mark on base.
Decoration: interlaced lines on rim and nozzle. On channel: a cross and a circle.

47. Pl. VIII:3
Length 10.5 cm; height 3.4 cm.
Form: Islamic lamp. Knob handle. Flat base.
Decoration: on the rim a herringbone pattern and a strip of rectangles; in the channel a circle.

48. Pl. VIII:4
Length 8.5 cm; height 3.0 cm.
Form: Islamic lamp. Pointed oval shape. Two ridges around the filling-hole, the outer one extending onto the nozzle in the form of a shallow channel. Knob handle. Base-ring.
Decoration: on the rim and nozzle wavy lines.

49. Fig. 13; Pl. IX:1
Length 9.8 cm; height 3.4 cm.
Form: like no. 48.
Decoration: on the rim double arches and dots; on the channel a straight line.
Parallels: Capernaum (Loffreda 1974: Fot. 27:5).

50. Fig. 13; Pl. IX:2
Length 9.7 cm; height 4.3 cm.
Form: like no. 49.
Decoration: on the rim a row of rectangles and a row of lozenges.

51. Pl. IX:3
Form: fragment of ovoid lamp. Base-ring with inscribed potter's mark. Knob handle.
Decoration: on the rim concentric triangles.

52. Pl. IX:4
Form: fragment of ovoid lamp with base-ring and knob handle.
Decoration: on the rim fragment of inscription.

53. Pl. X:1
Length 10.5 cm; height 3.6 cm.
Form: Islamic lamp. Pointed oval shape. Two ridges around the filling-hole, the outer one extending onto the nozzle in the form of a shallow channel. Base-ring. Knob handle. Potter's mark on base-ring.
Decoration: all over the surface of the upper part, a grid of lozenges; on the channel a straight line.
Parallels: Kh. Mefjer (Baramki 1944:Pl. XVII, no. 9); Beth Shearim (Avigad 1976:No. 37).

54. Fig. 13; Pl. X:2
Length 9.6 cm; height 4.4 cm.
Form: Islamic lamp. Pointed oval shape. Knob handle joined to the outer ridge. Potter's mark on base-ring.
Decoration: on the rim around the filling-hole, a guilloche and a radial pattern.
Parallels: Jerusalem (Arndt 1987:Gr. III – Umayyad); Beth Shearim (Avigad 1976:No. 51).

55. Fig. 14; Pl. X:3
Length 10.0 cm; height 4.1 cm.
Form: Islamic lamp. Oval pointed shape. Oval pointed base. Raised tongue-handle.
Decoration: on the rim vine-scrolls forming medallions inhabited by bunches of grapes.
Parallels: Nebo (Saller 1941:Pl. 143:17).

56. Pl. X:4
Length 9.3 cm; height 3.0 cm.
Form: Islamic lamp. Oval pointed shape. Tongue-handle rising from the back of the lamp.
Decoration: on the rim circles decorated with rosettes; on the channel two lozenges.

57. Pl. XI:1
Length 9.5 cm; height 3.3 cm.
Form: Islamic lamp. Oval pointed shape. Potter's mark on oval base. The broken handle is thought to be tongue-shaped.
Decoration: on the rim triangular arches decorated with dots; on the channel a branch.

58. Pl. XI:2
Length 10.0 cm; height 4.0 cm.
Form: wheel-made lamp made up of two sections, the top being placed above an open saucer. The handle is attached at one end to the rim of the saucer and at the other to the top. The lamp is not decorated.
Parallels: Kennedy 1963:Typ. 25 (Crusader lamp, 11th-12th centuries); Brooneer 1930:Pl. XXIV, no. 1530; Fustat (Kubiak 1970:Figs. 12 a, b – 13th-15th centuries); Antioch (Waagé 1941: 58b:182 – 11th-13th centuries).

59. Pl. XI:3
Length 6.5 cm; height 6.0 cm.
Form: wheel-made lamp with flat base and vase-shaped circular reservoir. Brown glazed.

60. Fig. 15; Pl. XI:4
Length 7.8 cm; height 2.9 cm.
Form: wheel-made lamp with flat, round reservoir and large central filling- hole. Short projecting nozzle. The lamp is not decorated.
Parallels: Rosenthal and Sivan 1978:No. 628 (this specimen is very similar in form but it is glazed; it is dated to the 9th-11th centuries); Nebo (Piccirillo-Alliata 1990:Fig. 8:1).

61. Pl. XI:5
Form: broken wheel-made lamp thought to be similar to no. 60, with a raised neck on the top.
Decoration: yellow-glazed with a slip-painted decoration.
Parallels: Antioch (Waagé 1941:No. 185 – 14th century).

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CHAPTER 8

THE ROMAN, BYZANTINE AND UMAYYAD POTTERY

Roni Ben-Arieh

INTRODUCTION

The ceramic finds from the Hammat Gader baths date from the Roman period to the Mamluk period. The discussion below presents the pottery dated by comparative research to the Roman, Byzantine and Umayyad periods. This material will be presented in two parts.

The first section deals with the ceramic assemblage uncovered in a fill below a stone floor of Stratum II, which was dated by an inscription (see Chapter 3, no. 1) to the year 455 C.E. This fill served as the foundation for the floor which was laid above three pools in Areas B, C and E. Indeed, the majority of the vessels in this assemblage date to the Late Roman period and the beginning of the Byzantine period (from the second to the fifth century C.E.).

However, it also includes several vessels dated to the Byzantine and Umayyad periods (from the sixth to the first half of the eighth century C.E.). The latter vessels postdate the proposed time of the floor's construction. This anomaly may be explained as follows:

1. Stratigraphic disturbances resulted in the penetration of later material below the floor.
2. The floor was laid later than the proposed date; alternatively, the original floor underwent changes and renovation during the course of its use.

According to the latter possibility, the inscription's date of 455 C.E. provides a *terminus post quem* (i.e., the earliest possible date for the laying of the floor), rather than a *terminus ante quem*.

During the earthquake of 749 C.E., the building's superstructure collapsed and damaged the stone slabs of the floor. A later water channel dug into the floor in the hall where the inscription was discovered (Area E) indicates that the original floor was indeed subsequently subjected to disturbances, both manmade and natural.

It appears then that the exceptionally wide range of the ceramic assemblage may be attributed to a combination of both factors: repeated alterations made in the stone floor, as well as the ravages of natural disasters.

The second section will present the pottery found in various loci in Areas B, C, E, F and G. While this pottery dates from the second to the first half of the eighth century C.E., most of the vessels are attributed to the sixth-eighth centuries C.E., since they were found beneath the rubble resulting from the earthquake of 749 C.E.

The fact that the baths were in constant use over a period of 600 years explains the dearth of pottery from the first centuries C.E., as it was obviously cleared away by the subsequent operators of the site.

THE CERAMIC ASSEMBLAGE BENEATH THE BYZANTINE FLOOR

The ceramic assemblage here was found in a fill which served as the foundation for a stone floor in the following loci: Locus 211 in the pool of Area B; Locus 313 (which constitutes the combination of Loci 317, 318, 323 and 326) under the floor covering the central pool of Area C; Locus 305 which is the northern bathtub of W6 in Area C; Locus 321 under the floor of the southern bathtub of W6; and Locus 516 in Area E.

The vessels in this assemblage will be presented in typological and chronological order, beginning with types dated from the second to the fifth century C.E., followed by vessels dated from the fifth to the first half of the eighth century C.E.

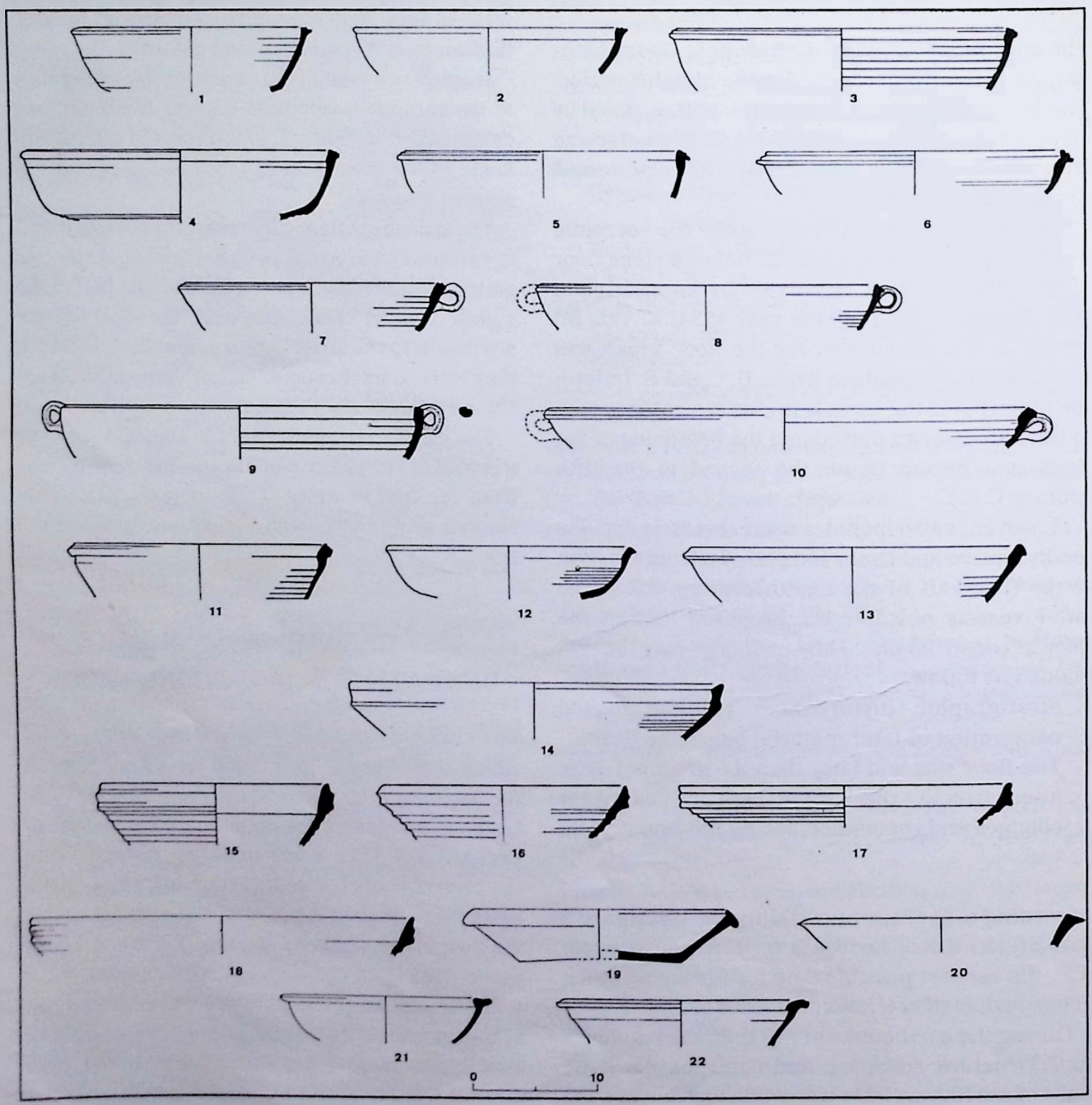
The Early Pottery (second to fifth centuries C.E.)

In this category we include vessels dated to the Late Roman period and the beginning of the Byzantine period, which were found under the floor with the above-mentioned inscription.

The typical vessels of this period are: Galilean bowls; basins made of well-levigated clay; storage jars with a thickened rim, ridged at the base of the neck; and Galilean cooking pots. The casseroles (cooking bowls) and cooking pots are not useful in dating, as they retained their form from the Late Roman period until the Umayyad period.

Bowls (Pl. I)

The Galilean bowl is common in all ceramic assemblages in the north of the country from the first to the mid-fifth centuries C.E. The dating of



I. Galilean and local bowls.

the Hammat Gader bowls is based on a typological and chronological study of this bowl type (Adan-Bayewitz 1993).

The results of neutron activation analysis performed on these bowls led Adan-Bayewitz to conclude that one group was produced in a pottery workshop at Kefar Hananiya in the Bet Hakerem Valley in Lower Galilee. The "Kefar Hananiya" bowls are characterized by a reddish-brown clay, while the Hammat Gader bowls are made of an orange-brown clay, and were apparently manufactured at a different workshop. The Hammat Gader bowls may be related to Forms 1B, 1C, 1D, and 1E of Adan-Bayewitz (1993:91-109).

The bowls in Pl. I:1-9 are his Form 1B. They have gently splaying walls, two grooves in the rim, and small vertical loop handles. These bowls date from the second to the fourth century C.E.

The bowls in Pl. I:10-14 are Forms 1C, 1D and 1E of Adan-Bayewitz. They have diagonally everted walls, a thickened rim, and two small vertical loop handles or pieces of clay applied to the sides. There is a marked rim variation between the different types.

The bowls in Pl. I:10-11 belong to his Forms 1C-1D. They have one or two grooves in the rim. These bowls date from the mid-third to the late fourth century C.E.

The bowls in Pl. I:12-14 belong to his Form 1E, characterized by a rim with no grooves. This type dates from the mid-third to the beginning of the fifth century C.E.

The local bowls are characterized by an orange clay and a variety of forms.

The bowls shown in Pl. I:15-18 are common in this assemblage. They are made of coarse orange clay and have diagonally everted walls and a thickened stepped rim. Similar bowls were found in the nearby city of Gadara, where the excavators claimed that they replaced the Galilean bowls and dated them from the second half of the fifth century C.E. to the Umayyad period (Nielsen 1993:168-169, Taf. 171-176).

PLATE I. GALILEAN AND LOCAL BOWLS

No.	Locus	Type	Ware	Decoration
1	516	Bowl	Orange	Two grooves on rim
2	516	Bowl	Brownish-orange	"
3	516	Bowl	Orange	"
4	516	Bowl	Orange	"
5	516	Bowl	Orange	"
6	516	Bowl	Orange	"
7	516	Bowl	Orange	"
8	516	Bowl	Orange	"
9	516	Bowl	Orange	"
10	516	Bowl	Orange	"
11	516	Bowl	Orange	"
12	516	Bowl	Orange	Thickened rim
13	516	Bowl	Orange	
14	313	Bowl	Orange	
15	516	Bowl	Orange	Thickened ridged rim
16	516	Bowl	Orange	"
17	516	Bowl	Orange	"
18	516	Bowl	Orange	"
19	321	Bowl	Brownish-orange	
20	516	Bowl	Orange	
21	211	Bowl	Orange	
22	211	Bowl	Orange	

At Hammat Gader these bowls were found under the floor dated to 455 C.E., so that their initial date of manufacture might have been as early as the first half of the fifth century C.E.

The assemblage also included a variety of additional bowl forms (Pl. I:19-22) made of well-levigated orange clay. Several have diagonally everted walls (Pl. I:19, 20, 22), while one is rounded (Pl. I:21). The rim shapes are variations of ledge rims. No parallels were found for these bowls.

Basins (Pl. II)

The basins shown in Pl. II:1-7, 10-17 are made of well-levigated pinkish-orange clay. Their thickened rim is everted and the walls are diagonally everted. These basins date to the Late Roman period (third-fourth centuries C.E.) and differ from the Byzantine basins in both the color and quality of the ware, as well as the rim morphology.

The basins shown in Pl. II:1-5 have thickened everted rims. At Jalame, such vessels are termed "basins with everted rim," and are dated to the second half of the fourth century C.E. (Johnson 1988:133). Similar basins were discovered in a church at Nazareth (Bagatti 1969:Fig. 20:12-20).

Basins of this type were also found in the bathhouse at Gadara (Nielsen et al. 1993:Taf. 32:266-270).

The basins shown in Pl. II:6-7 are decorated with finger imprints on the rim and a ridge below it. Plate II:7 also has an incised wavy line on the interior and exterior of its walls. No parallels were found for this type.

The basin in Pl. II:9 is made of coarse orange clay. It belongs to Type D3 at Capernaum and is dated to the Late Roman and Byzantine periods (Loffreda 1974:54).

The basins shown in Pl. II:10-17 have a convex overhanging rim top. Similar basins were found in the bathhouse at Gadara (Nielsen et al. 1993:Taf. 32:262, 273- 274).

Cooking Pots and Casseroles (Pl. III)

The most common cooking pot found in the ceramic assemblage underneath the floor is the Galilean cooking pot. These pots were common at all Galilean sites from the first to the fifth century C.E. The cooking pots from Hammat Gader are dated from the first to the fourth century C.E., on the basis of the typology and chronology determined by Adan-Bayewitz (1993:119-130).

The Galilean cooking pots may be divided into two groups:

Open forms (Pl. III:1-5) The open cooking pots belong to Adan-Bayewitz's Form 3B. They have carinated shoulders, a horizontal, relatively broad rim, a round base, and two vertical ring handles extending from the rim to the body. They date from the second to the end of the fourth century C.E.

Closed forms (Pl. III:7-11). These cooking pots belong to his Form 4C. They have a vertical or splaying neck, a flat rim (sometimes grooved), globular body, and two handles extending from the rim to the shoulder. These pots date from the second to the mid-fourth century C.E.

Cooking Pots with Carinated Shoulders (Pl. III:12)

This type has a high neck, wide rim and carinated shoulder. Similar cooking pots were found in a pit at Khirbet er-Ras near Nablus, together with coins which date them to the first quarter of the third to the mid-fourth century C.E. (Bull and Campbell 1968:15-16).

Miscellaneous Cooking Pots (Pl. III:13-17)

The other cooking pots in this assemblage are made of coarse orange-brown clay. They have a convex or concave neck, and the shoulders are either rounded (Pl. III:14), sloping (Pl. III:13, 15, 17) or carinated (Pl. III:16). The body is ribbed, with two handles extending from the rim to the shoulder. Similar cooking pots found at Khirbet Shema' (Type 2.3) were dated to the fourth and fifth centuries C.E. (Meyers et al. 1976:199).

High-necked Cooking Pots (Pl. III:18)

These cooking pots have a high neck, globular ribbed body, and handles extending from rim to shoulder. The pot shown in Pl. III:18 belongs to Capernaum Type C2. This type is characterized by a grooved rim. Loffreda (1974:45, Fig. 10:1-4)

maintains that this type was common mostly during the Late Roman period (300-450 C.E.), becoming rarer at the beginning of the Byzantine period.

Neckless Cooking Pots (Pl. III:19-25)
At many sites this was an especially common type during the Late Roman and Byzantine periods (Johnson 1988:190-195, nn. 66-69). These cooking pots have an everted rim. The shoulders are sloping or rounded, and the globular body is ribbed; the base is convex. The Hammat Gader examples represent three distinct rim variations: an everted rim which has either a plain or a grooved upper surface (Pl. III:19-23); a thicker rim with a square section (Pl. III:24); and a wide rim with a depression (Pl. III:25).

All of these are variations of neckless cooking pots found at Jalame and dated to the fourth century C.E. (Johnson 1988:190-195).

Parallels to all the variations were found in fourth-century C.E. layers at Khirbet Shema' (Meyers et al. 1976:217-218). Neckless cooking pots were found in Strata V- VI at Meiron and dated from 250 to 750 C.E. (Meyers et al. 1981: Fig. 8.15:13-18). A neckless cooking pot revealed in Stratum V at Capernaum was dated to the first half of the seventh century C.E. (Peleg 1989:61, Fig. 52:18).

Similar cooking pots uncovered at Pella dated from the end of the sixth to the beginning of the seventh century C.E. (McNicoll, Smith and Hennessey 1982:Fig. 138:5-10). Smith et al. (1989: 110) claim that this type of cooking pot continued to appear until the end of the Byzantine period.

Casseroles (Cooking Bowls) (Pl. III:26-34)
These casseroles are common in ceramic assemblages of the Late Roman, Byzantine and Umayyad periods at sites throughout the country (Johnson 1988:200, nn. 74-76; Peleg 1989:70-72). Due to the longevity of the form, specific chronological-typological dating is impossible. The casseroles found at Hammat Gader are made of orange clay with black and white inclusions, and have two horizontal handles; the rim is either flat or bevelled. They may be divided into three subtypes:

1. Rounded, ribbed walls (Pl. III:26-29).
2. Sloping walls, partially ribbed (Pl. III:30, 31).
3. Carinated walls, unribbed (Pl. III:32-34).

The casseroles in the first category belong to Capernaum Type C7, dated to the Late Roman and Byzantine periods (Loffreda 1974:48-49). The second and third subtypes are common at Capernaum and belong to Types C5 and C6, which are similarly dated.

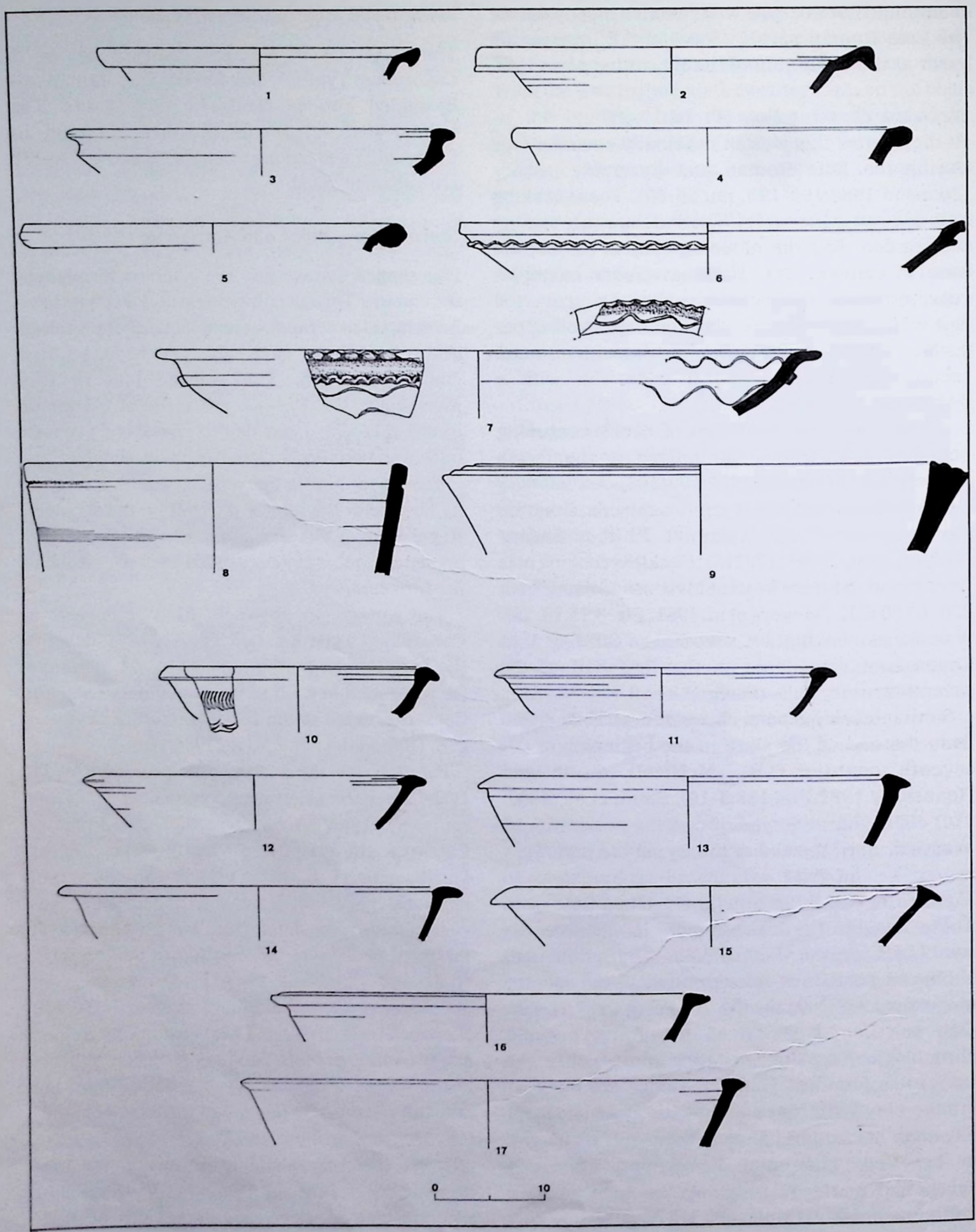
Storage Jars, Pipes and Amphorae (Pl. IV)

Bag-shaped storage jars are common throughout the country. Though numerous jars of this type have been found in ceramic assemblages, their typology and chronology have not yet been studied comprehensively. The storage jars in this assemblage (Pl. IV:1-12) are made of orange or brown clay, with a bag-shaped ribbed body, convex base, and two vertical handles on the shoulder.

These jars have a thickened rim with a ridge at its base or at the join of the neck to the shoulder. Regardless of rim variation, all the storage jars presented in this plate are dated from the second to the fifth century C.E.

The storage jar shown in Pl. IV:1 belongs to Capernaum Type A3 (Loffreda 1974:27), dated to the Late Roman period (138-450 C.E.). A similar jar was found in a fill in the promontory palace at Caesarea, dated to the second and third centuries C.E. (Bar Nathan and Adato 1986:163).

Parallels for the storage jars presented in Pl. IV:2-12 were revealed at numerous sites. These jars represent Type 1A found in the hippodrome at Caesarea and were dated from the second to the fourth century C.E. (Riley 1975:26). Storage jars of the same type found in a cistern at Khirbet er-Ras near Nablus were dated from the first quarter of the third century to the mid-fourth century C.E. (Bull and Campbell 1968:15-16). Similar jars uncovered at Capernaum were defined as Type B (Loffreda 1974;43-44) and dated to the Late Roman and Byzantine periods. Such storage jars at Khirbet Shema' were designated Type B dating from the mid-third century to the end of the fourth century C.E. (Meyers et al. 1976:225-227). Specimens of this type found at Jalame were dated to the Late Roman period (Johnson 1988:214-219). Other sites have also yielded bag-shaped storage jars (Johnson 1988:214, nn. 108-109).



II. Basins.

Large Storage Jars (Pl. IV:13-16)
The ceramic assemblage found under the stone floor at Hammat Gader included several unique large storage jars, made of well-levigated pinkish-orange clay. The rim is everted and the body is smooth. No parallels were found for these jars. However, it is noteworthy that their ware is extremely similar to that of the pipes (Pl. IV:7-11) which date up to the first half of the fifth century C.E.

Pipes (Pl. IV:17-23)
These objects are made of well-levigated orange-brown clay and have a thickened rim and a ribbed body. Initially, the fragments were assumed to be storage jars; however, the lack of known parallels and the straight sides led to the suggestion that they served as pipes. Similar pipes were found in the bathhouse at Gadara. In contrast to the more common pipes, the Hammat Gader examples have a rim which is as wide as the pipe itself. At Gadara, ceramic pipes were used in the sewage system, while lead pipes were employed for the water supply. The diameter of the Gadara pipes ranges from 5 to 24 cm, averaging 10.7 cm. Most of the pipes were recovered in a dump dating to the period of the first bathhouse, and were thus in use until its destruction in 447 C.E. (Nielsen et al. 1993:158-159).

Amphora (Pl. IV:24)
The amphora shown in Pl. IV:24 has a wide neck and a thickened double handle. No parallels for this type were found.

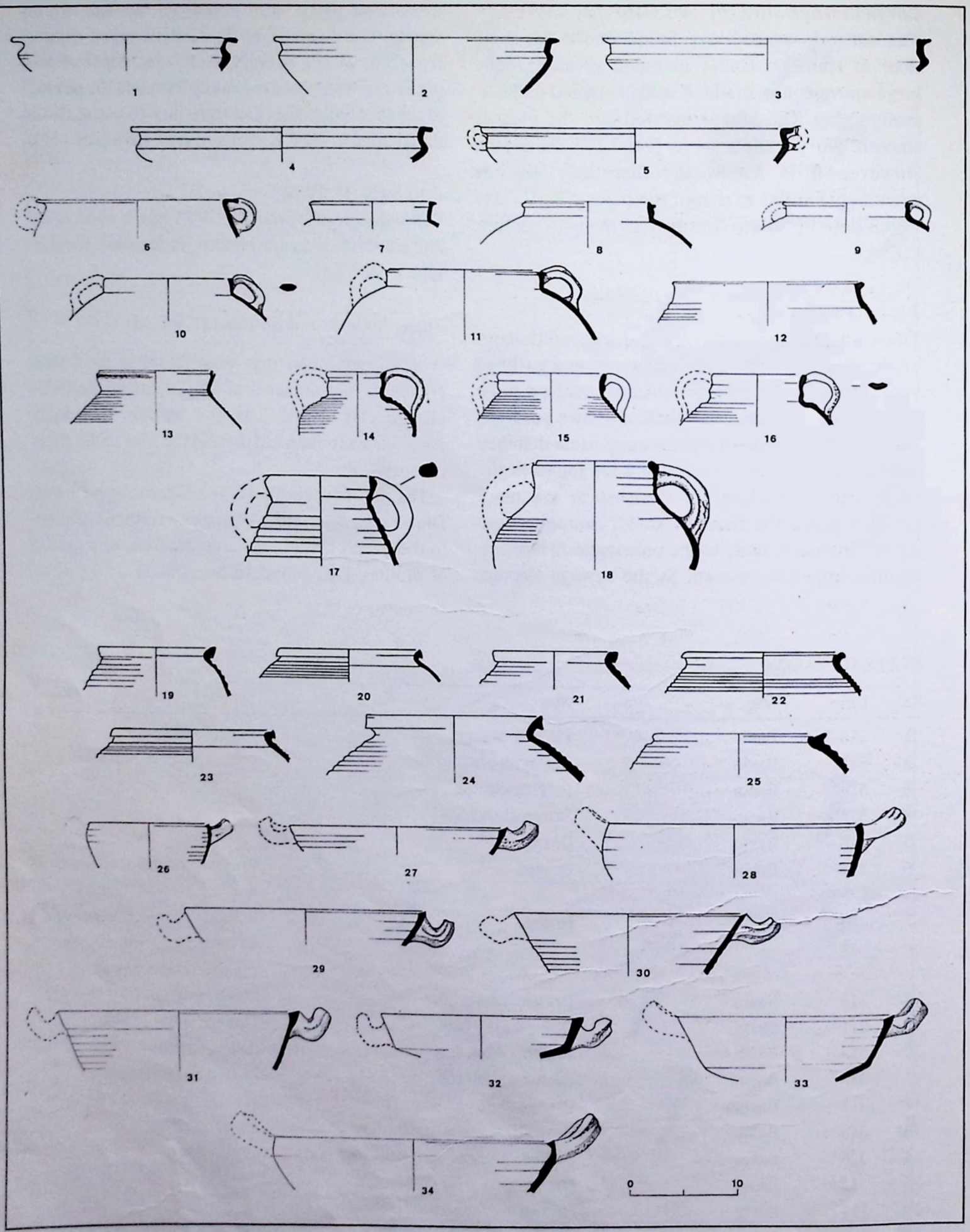
Jugs, Juglets, and Bottles (Pl. V:1-13)

A large number of jugs were found in the baths complex. They are made of well-levigated pinkish-orange clay. Those jugs and bottles for which parallels were found date from the first to the fifth century C.E.

The jug shown in Pl. V:1 is similar to Type 8.3 of Diez-Fernandez (1983:197), dated from the second to the fourth century C.E., on the basis of a group of similar jugs found in Stratum IV at Khirbet

PLATE II. BASINS

No.	Locus	Type	Ware	Decoration
1	516	Basin	Pinkish-orange	Cream-colored
2	516	Basin	Buff with black grits	
3	516	Basin	Pinkish-orange	
4	516	Basin	Brownish-orange	
5	516	Basin	Orange	
6	211	Basin	Orange	Prominent ridge with finger imprints on rim
7	211	Basin	Orange	Incised decoration inside and on sides, finger imprints on rim and ridge under rim
8	313	Basin	Orange, cream core	Combing on body
9	211	Basin	Orange, gray core	Three grooves on rim
10	313	Basin	Brown, cream slip	Rouletted body
11	313	Basin	Brown, cream slip	Incised lines on sides
12	313	Basin	Orange slip	
13	313	Basin	Brownish-orange, cream slip	
14	325	Basin	Pinkish-orange	
15	211	Basin	Orange	
16	211	Basin	Orange	
17	516	Basin	Orange	



III. Cooking pots and casseroles.

Shema'. The Hammat Gader jug differs from his type in that its handle extends from the rim rather than from mid-neck.

The jug in Pl. V:2 has a simple trefoil rim and is similar to Type 9.8 of Diez-Fernandez. The type was common at Magdala and is dated from the end of the first to the end of the third century C.E. (Diez-Fernandez 1983:117, 200).

The jug shown in Pl. V:3 is similar to one found at Khirbet Shema' in a level dated to 180-284 C.E. (Meyers et al. 1976:230, Pl. 7.22:5).

The bottle shown in Pl. V:4 is similar to Type 7.2 of Diez-Fernandez (1983:195) found at Magdala.

The jug in Pl. V:9 belongs to his Type 9.5, found at Magdala and Nazareth (Diez-Fernandez 1983: 199-200). This jug may be identified with Form 6B of Adan-Bayewitz (1993:143-144), dated to the second and third centuries C.E.

PLATE III. COOKING POTS AND CASSEROLES

No.	Locus	Type	Ware	Decoration
1	516	Open cooking pot	Brown	Carinated sides
2	516	Open cooking pot	Orange	"
3	516	Open cooking pot	Orange	"
4	516	Open cooking pot	Orange	"
5	516	Open cooking pot	Orange	
6	516	Closed cooking pot	Orange	
7	516	Closed cooking pot	Orange	
8	516	Closed cooking pot	Orange	Groove on rim
9	516	Closed cooking pot	Brown	
10	516	Closed cooking pot	Orange	
11	516	Closed cooking pot	Orange	Two grooves on rim
12	516	Closed cooking pot	Brown	
13	516	Closed cooking pot	Light orange	Deep groove on rim
14	321	Closed cooking pot	Orange	
15	313	Closed cooking pot	Orange	
16	313	Closed cooking pot	Brown	
17	211	Closed cooking pot	Orange	
18	321	Closed cooking pot	Brown	
19	313	Neckless cooking pot	Orange	
20	516	Neckless cooking pot	Brown	
21	313	Neckless cooking pot	Orange	
22	313	Neckless cooking pot	Orange	
23	313	Neckless cooking pot	Orange	
24	313	Neckless cooking pot	Orange	
25	313	Neckless cooking pot	Orange	
26	313	Casserole	Light brown	
27	516	Casserole	Orange, brown slip	
28	313	Casserole	Orange, brown slip	
29	211	Casserole	Orange	
30	211	Casserole	Orange	
31	211	Casserole	Orange	
32	516	Casserole	Buff	
33	313	Casserole	Orange	
34	516	Casserole	Orange	

The jug shown in Pl. V:10 is similar, though not identical, to Adan-Bayewitz's Form 6C. Its neck was formed separately and later joined to the body, a glob of clay being left near the neck. This form was dated from the beginning of the fourth to the beginning of the fifth centuries C.E. (Adan-Bayewitz 1993:144-146).

No parallels were found for the other bottles. Their shapes suggest that they contained oils and perfumes used in the baths.

Pottery Postdating the Fifth Century C.E. Found in the Assemblage Beneath the Floor

This subsection will discuss the pottery dating to the Byzantine and Umayyad periods found under the floor with the inscription.

Stratigraphic disturbances caused by subsequent occupation, as well as the earthquake in 749 C.E., resulted in the penetration of this later material beneath the floor. The typical vessels of this period are: Late Roman Ware bowls (Pl. V), Byzantine storage jars with short necks (Pl. VI:1-4), and brown and gray basins (Pl. VI:5-6).

Imported Bowls

Late Roman Pottery (Pl. V:14-26)

Late Roman pottery has been dated by Hayes (1972). In the present assemblage, three groups of bowls belonging to this ware were found:

1. Late Roman C Ware (LRC);
2. Cypriot Red Slip Ware (LRD);
3. African Red Slip Ware (ARS).

Late Roman C Ware (Pl. V:14-21). These bowls were apparently produced in Antioch in Asia Minor and were especially common throughout the Mediterranean basin until the seventh century C.E. They are made of a red clay, covered with a thin slip which blends with the ware. The rim and body were manufactured separately and later joined. The rim is usually rouletted; two of the Hammat Gader bowls bear such a decoration on their rim (Pl. V:16, 21).

The bowls shown in Pl. V:14-21 belong to Hayes's Form 3. They have sloping walls, a thickened overhanging rim, and a low foot. These bowls are late examples of Form 3 (Types H, F), which have a smaller and shorter rim than the earlier examples. Type F has been dated to the beginning of the sixth century C.E., while Type H (Pl. V:14, 15, 21) dates to the end of that century (Hayes 1972: 323-338).

Cypriot Red Slip Ware (Pl. V:22-25). These bowls, apparently produced in a pottery workshop in Cyprus, are made of well-levigated clay with colors ranging from yellow and brown to orange or red. They are common from the end of the fourth until the seventh century C.E.

The exterior is decorated with rouletting, and the base is sometimes stamped. The characteristic incised wavy line under the rim on the Cyprus-produced bowls is missing in the Hammat Gader bowls.

The bowls shown in Pl. V:22-25 are defined as Hayes's Form 2. They have steep walls with rouletting, and a knobbed rim with grooves. They are dated from the second half of the fifth century to the mid-sixth century C.E. (Hayes 1972:373-376).

African Red Slip Ware (Pl. V:26). These bowls were produced in North Africa from the first to the seventh century C.E. They are made of reddish-orange clay with a slip which blends with the ware. The vessels are usually decorated with designs made by stamping, incision or a mold-made relief; often the base is roulette decorated. Very few examples of this ware appear at Hammat Gader.

The bowl shown in Pl. V:26 belongs to Hayes's Form 91. It has a hemispherical body, a simple rim with a broad flange on the rim exterior, and a low foot. The interior features feather-rouletting. This bowl is dated to 450-530 C.E. (Hayes 1972:140-144).

Basins (Pl. VI:1-2)

The basin shown in Pl. VI:1 has an inverted collared mouth, and a prominent carination at the join of the rim to the body. Identical basins were found in Stratum V at Capernaum, where they are dated to 600-650 C.E. (Peleg 1989:60). These belong to Type "C12c" defined by Loffreda (1974:53) at Capernaum and dated to the end of the Byzantine period.

The basin in Pl. VI:2 is a gray basin typical of the

Umayyad period. It is decorated with a deep incisions and has combed lines on its walls. Similarly decorated basins were found at Pella in an Umayyad assemblage dating to the beginning of the eighth century C.E. (McNicoll, Smith and Hennessey 1982:Pl. 149) and at Khirbet Mefjer (Baramki 1944:69).

Storage Jars (Pl. VI:3-6)

These are the typical bag-shaped storage jars common in the Byzantine period. The jars shown in Pl. VI:3-5 are made of brownish-black clay, and have a short unridged neck. These storage jars belong to Type "C1" at Capernaum (Loffreda 1974:45), dated to the Byzantine period.

Another storage jar (Pl.VI:6) has a swollen neck, an everted rim and a slightly carinated shoulder. A similar vessel found at Pella was dated to the Late Byzantine period (Smith et al. 1989:109, Pl. 14:51).

POTTERY FROM VARIOUS LOCI

The ceramic material found in various loci throughout the baths complex will be discussed in this section.

This pottery is dated from the second to the mid-eighth century C.E. Most of the vessels date to the Late Byzantine and Umayyad periods (from the sixth to the mid-eighth century C.E., while only a few belong to the Late Roman period and the beginning of the Byzantine period (from the second to the fifth century C.E.). The pottery will be presented typologically and chronologically.

Early Material (second to fifth century C.E.)

This subsection presents the pottery found in various loci throughout the baths complex dating to the Late Roman and beginning of the Byzantine periods. Typologically, this material is similar to the assemblage found beneath the floor, discussed above.

Bowls and Cooking Pots

Galilean Bowls (Pl. VI:7-12)

As mentioned above in the discussion of the first assemblage, the Galilean bowls have been studied and dated by Adan-Bayewitz (1993:91-109). These bowls have a flat base, thickened rim and ribbed walls. They may be subdivided into the three categories. The bowl shown in Pl. VI:7 belongs to his Form 1B. It has two grooves on the rim, and small loop handles extending from rim to body. The bowl dates from the beginning of the second century to the fourth century C.E. The bowl in Pl. VI:8 belongs to his Form 1C. It has a deep groove on the rim and is dated from the mid-third century to the end of the fourth century C.E.

The bowls shown in Pl. VI:9-12 belong to Form 1E of Adan-Bayewitz. They have a smooth, thickened rim with a square or round section, and are dated from the mid-third century to the beginning of the fifth century C.E.

Galilean Cooking Pots (Pl. VI:13-17)

The cooking pots belong to Form 4C of Adan-Bayewitz. They have thin walls, a vertical or splaying neck, a wide rim (often grooved), a globular body, and handles extending from rim to body. These cooking pots are dated from the mid-second to mid-fourth century C.E.

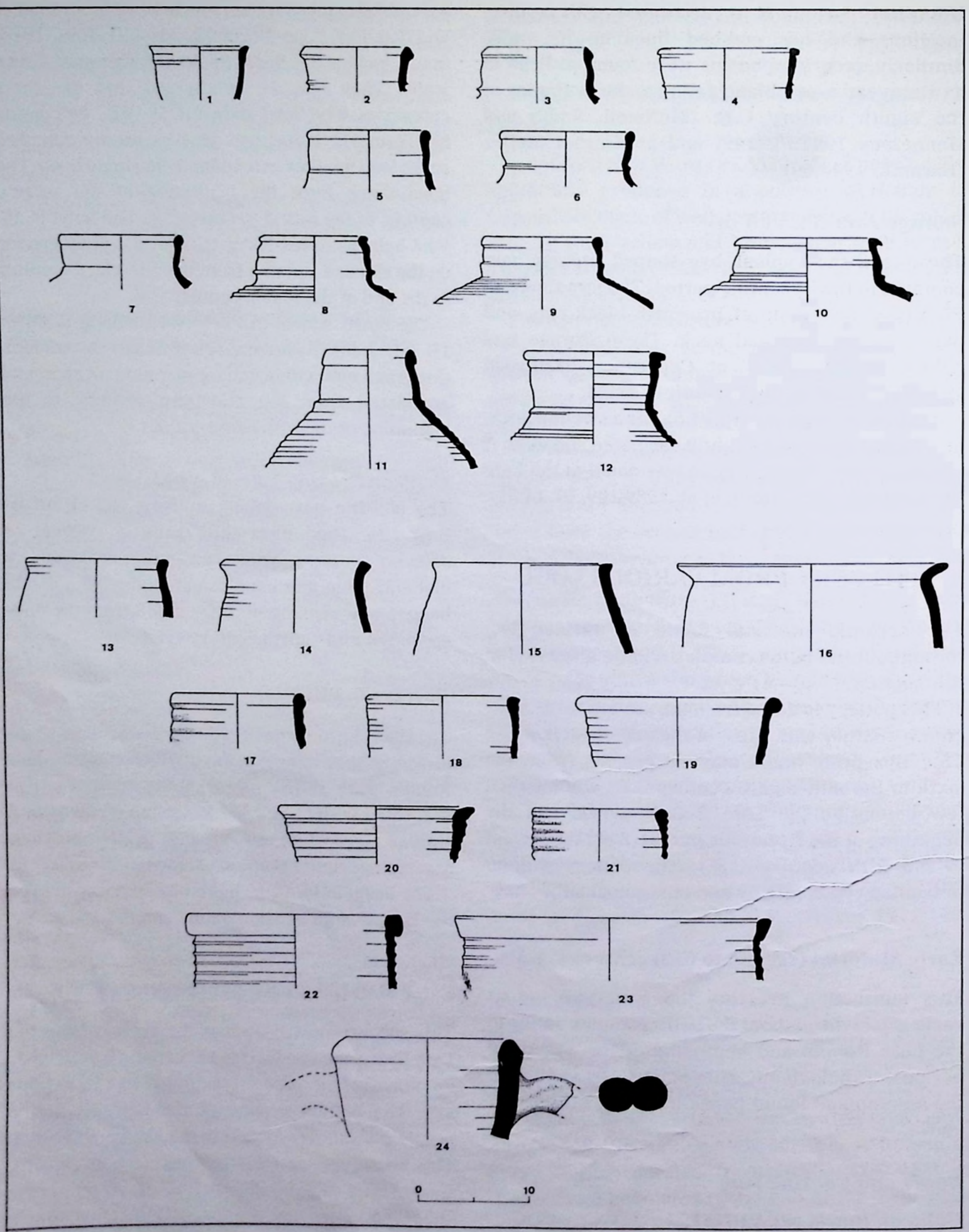
Basins (Pl. VI:18-21)

The basins are made of well-levigated clay, which indicates that they may be attributed to the Late Roman period. The basin shown in Pl. VI:18 is decorated with an incised wavy line on the rim. A similar decoration was found in the previous assemblage under the floor, shown in Pl. II:7.

The basin in Pl. VI:19 has a plastic decoration on the body and an incision on the rim.

Later Material (sixth-eighth century C.E.)

This subsection will discuss the vessels from the Late Byzantine and Umayyad periods. A very large quantity of late pottery was found in the various loci. The pottery typical of the Late Byzantine period continues to appear in the Umayyad period. This continuity pertains to cooking pots, basins, storage jars and bowls. On the other hand, the Umayyad period saw the floruit of a range of new forms and decorations.



IV. Storage jars, pipes and amphora.

PLATE IV. STORAGE JARS, PIPES AND AMPHORA

No.	Locus	Type	Ware	Decoration
1	516	Storage jar	Light orange	
2	516	Storage jar	Orange	
3	516	Storage jar	Light brown	
4	516	Storage jar	Black-brown	
5	211	Storage jar	Brownish-pink	
6	211	Storage jar	Orange	
7	516	Storage jar	Brown	
8	211	Storage jar	Orange	
9	313	Storage jar	Black	
10	516	Storage jar	Orange	
11	516	Storage jar	Brown	
12	211	Storage jar	Orange	
13	516	Storage jar	Orange	
14	516	Storage jar	Orange	
15	516	Storage jar	Orange	
16	516	Storage jar	Orange, gray core	
17	516	Pipe	Orangish, light gray core	
18	516	Pipe	Orange, gray core	
19	516	Pipe	Buff-brown	
20	211	Pipe	Orange	
21	516	Pipe	Orange	
22	516	Pipe	Orange	
23	516	Pipe	Brown	
24	516	Amphora	Orange, black grits	

The vessels will be presented typologically, and an attempt will be made to differentiate between pottery of the Late Byzantine and Umayyad periods.

Bowls

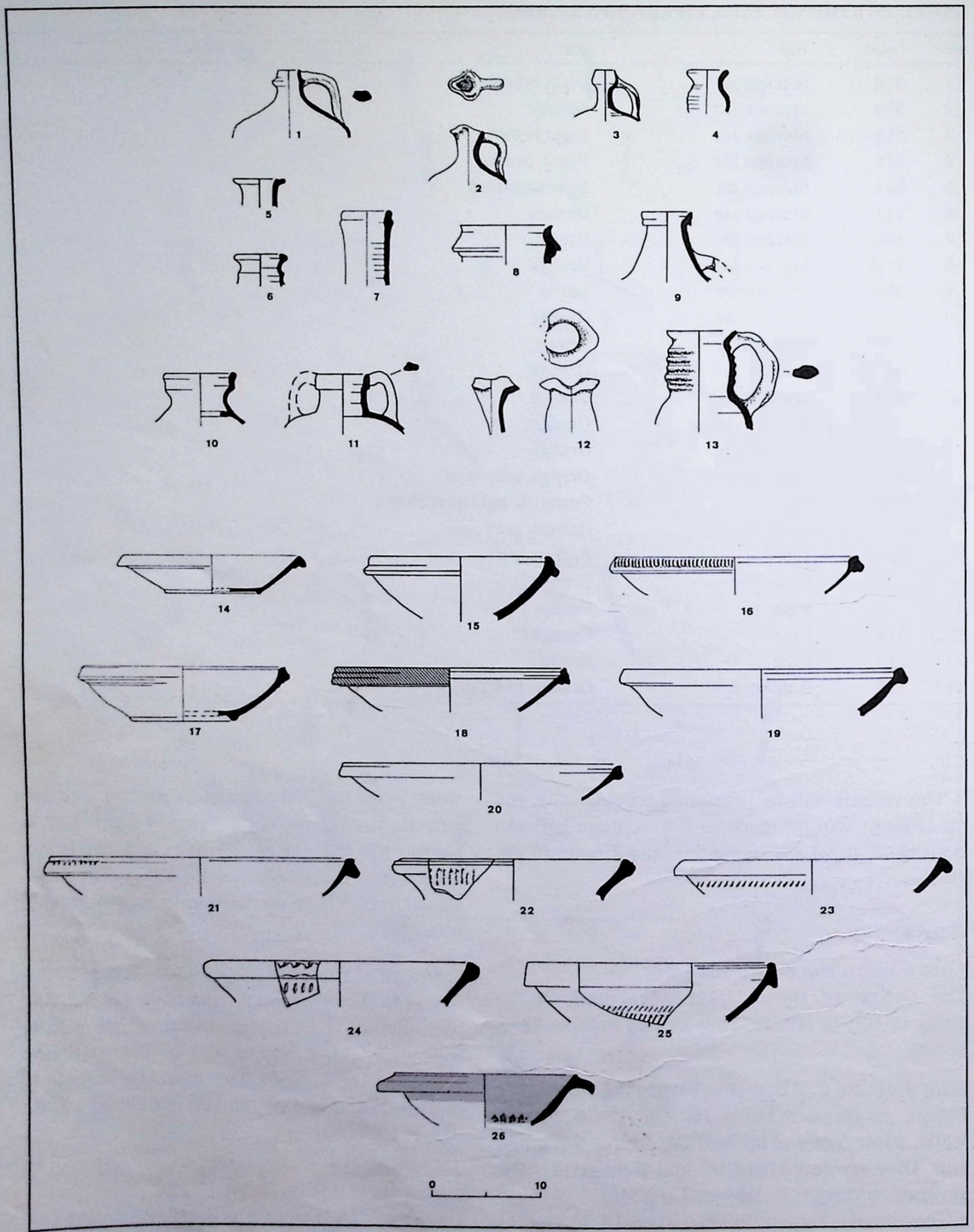
Late Roman Wares (Pl. VII:1-16)
The dating of these bowls was based on the study of Hayes (1972). They belong to three categories.

Late Roman C Ware (Pl. VII:1-4). These bowls belong to Hayes's Form 10. They have sloping walls, a low foot and an everted, convex thickened rim. They are dated from the end of the sixth to the seventh century C.E. (Hayes 1972:346).

The bowls shown in Pl. VII:5-12 belong to Hayes's Form 3 (Types H, F). They have sloping walls, a low foot and an overhanging rim. The rim exterior is often rouletted. Types H and F have a shorter rim than the earlier types and date to the sixth century C.E. (Hayes 1972:338). The bowl shown in Pl. VII:13 also belongs to Form 3, though it is larger.

Cypriot Red Slip Ware (Pl. VII:13-16). These bowls belong to Hayes's Form 9. They have a broad, flat base, flaring walls, and a thickened rim with a triangular section hooked on top. The walls are rouletted. These bowls date from the mid-sixth century to the end of the seventh century C.E. (Hayes 1972:382).

Coarse Ware Bowls (Pl. VII:17-22)
These bowls are made of orange clay with black and white inclusions, similar to cooking pot ware. The



V. Jugs, juglets and bottles (1-13), Late Roman Ware bowls (14-26).

PLATE V. JUGS, JUGLETS AND BOTTLES (1-13), LATE ROMAN WARE BOWLS (14-26)

No.	Locus	Type	Ware	Decoration
1	516	Juglet	Orange	
2	211	Jug	Light orange	Trefoil rim
3	516	Juglet	Light orange	
4	313	Bottle	Orange	
5	211	Bottle	Orangish	
6	211	Bottle	Orange	
7	516	Bottle	Orangish	
8	516	Juglet	Orangish	
9	516	Jug	Brown	
10	313	Juglet	Orange	
11	211	Juglet	Orange	
12	313	Jug	Orange	Trefoil rim
13	313	Jug	Orange, gray core	
14	313	Bowl	Orange	
15	211	Bowl	Brownish-orange	
16	313	Bowl	Brownish-orange	Rouletted on rim
17	321	Bowl	Orange	
18	516	Bowl	Orangish-brown	
19	516	Bowl	Orange	
20	516	Bowl	Orange	
21	313	Bowl	Light orange	Rouletted on rim
22	211	Bowl	Brownish-pink	Rouletted on body
23	321	Bowl	Brownish-pink	Rouletted on body
24	211	Bowl	Brownish-orange	Rouletted on rim and body
25	516	Bowl	Orange	Rouletted on body
26	313	Bowl	Orange, red slip	Rouletted inside

walls are round or sloping, both ribbed and unribbed; the rim interior is bevelled. Though these vessels resemble lids, their depth and rim shape indicate that they were perhaps used as cooking bowls. A similar vessel found at Capernaum was defined as Type "C7" and dated to the Byzantine period (450-638 C.E.) (Loffreda 1974:48, Fig. 11:11).

Local Bowls (Pl. VIII)

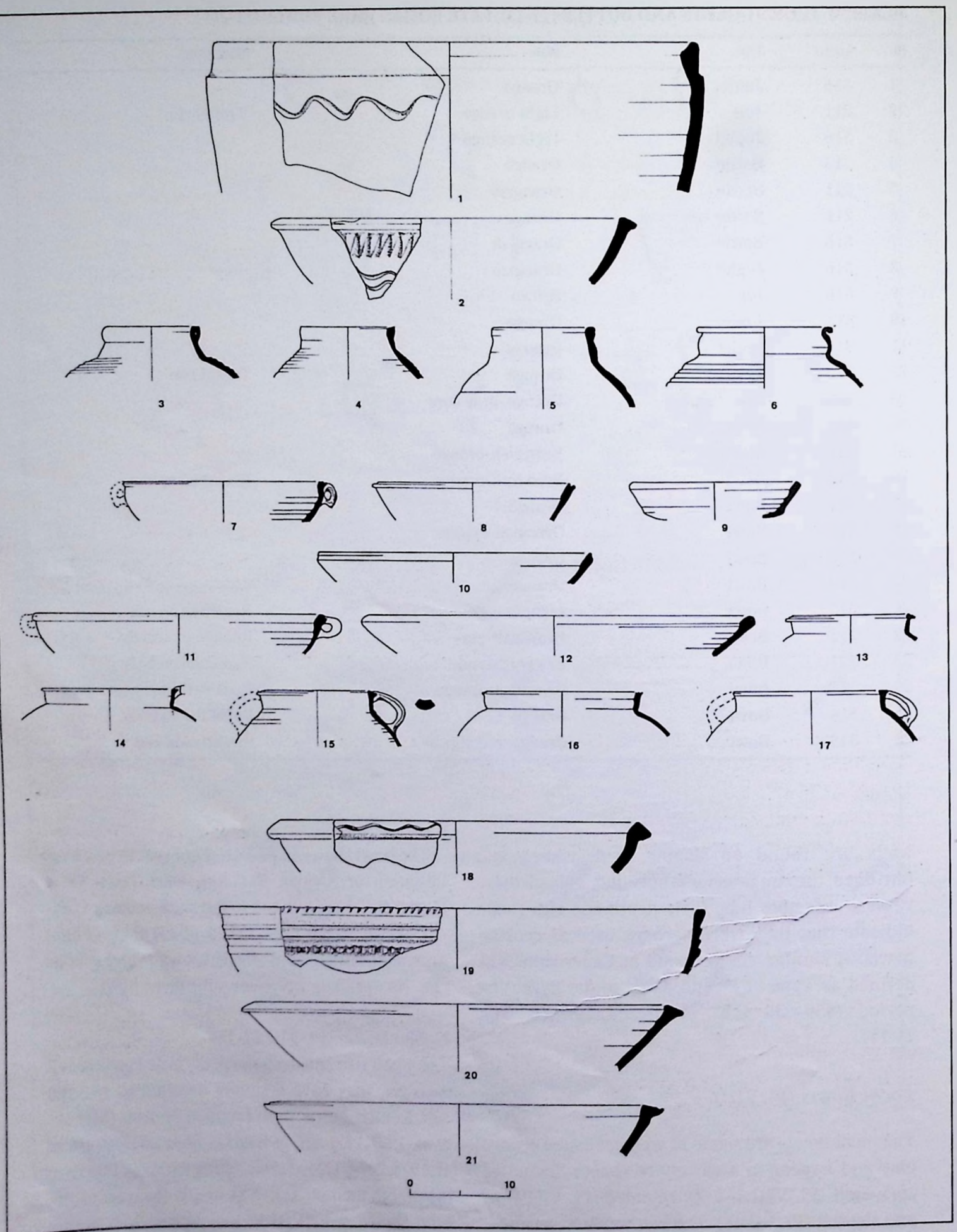
The local bowls are made of well-levigated orange clay and appear in a variety of shapes, including carinated (Pl. VIII:1-2, 7), rounded (Pl. VIII:4- 6) and sloping (Pl. VIII:8). The two bowls shown in Pl. VIII:2-3 have a folded outer rim.

The bowl shown in Pl. VIII:8 appears to be a local imitation of African Red Slip Ware Form 99 of Hayes (1972:155), dated to the sixth century C.E.

The large bowls in Pl. VIII:9-11 are made of light brownish-orange clay, with thick walls and a ledge rim. No parallels were found for these bowls.

Goblet Bowls (Pl. VIII:12-15)

The small size and deep shape of these bowls recall a goblet; they have a simple inverted or everted rim. Similar bowls were found at Meiron (Meyers et al. 1981:123) and at Khirbet Shema' (Meyers et al. 1976:207-217) in levels dating from the fourth to the eighth century C.E. The ompholos base of the bowl shown in Pl. VIII:13 was especially common during the Umayyad period.



VI. Basins, storage jars, Galilean bowls and cooking pots.

PLATE VI. BASINS, STORAGE JARS, GALILEAN BOWLS AND COOKING POTS

No.	Locus	Type	Ware	Decoration
1	516	Basin	Brown	Incised wavy line on body
2	313	Basin	Gray	Rouletted and combed on body
3	313	Storage jar	Black-brown	
4	516	Storage jar	Brown	
5	516	Storage jar	Black-brown	
6	516	Storage jar	Light orange	
7	631	Bowl	Brown	Two grooves on rim
8	614	Bowl	Brown	Deep groove on rim
9	629	Bowl	Brown	
10	305	Bowl	Brown	
11	614	Bowl	Brownish-orange	
12	616	Bowl	Orange, white grits	
13	314	Closed cooking pot	Orange	Two grooves on rim
14	631	Closed cooking pot	Brown	
15	629	Closed cooking pot	Black	Two grooves on rim
16	614	Closed cooking pot	Orange	"
17	905	Closed cooking pot	Brown	"
18	305	Basin	Brownish-pink	Incised wavy line on rim
19	906	Basin	Buff	Sharply incised line on rim and plastic decoration on body
20	305	Basin	Orangish-cream	
21	305	Basin	Pinkish-orange	

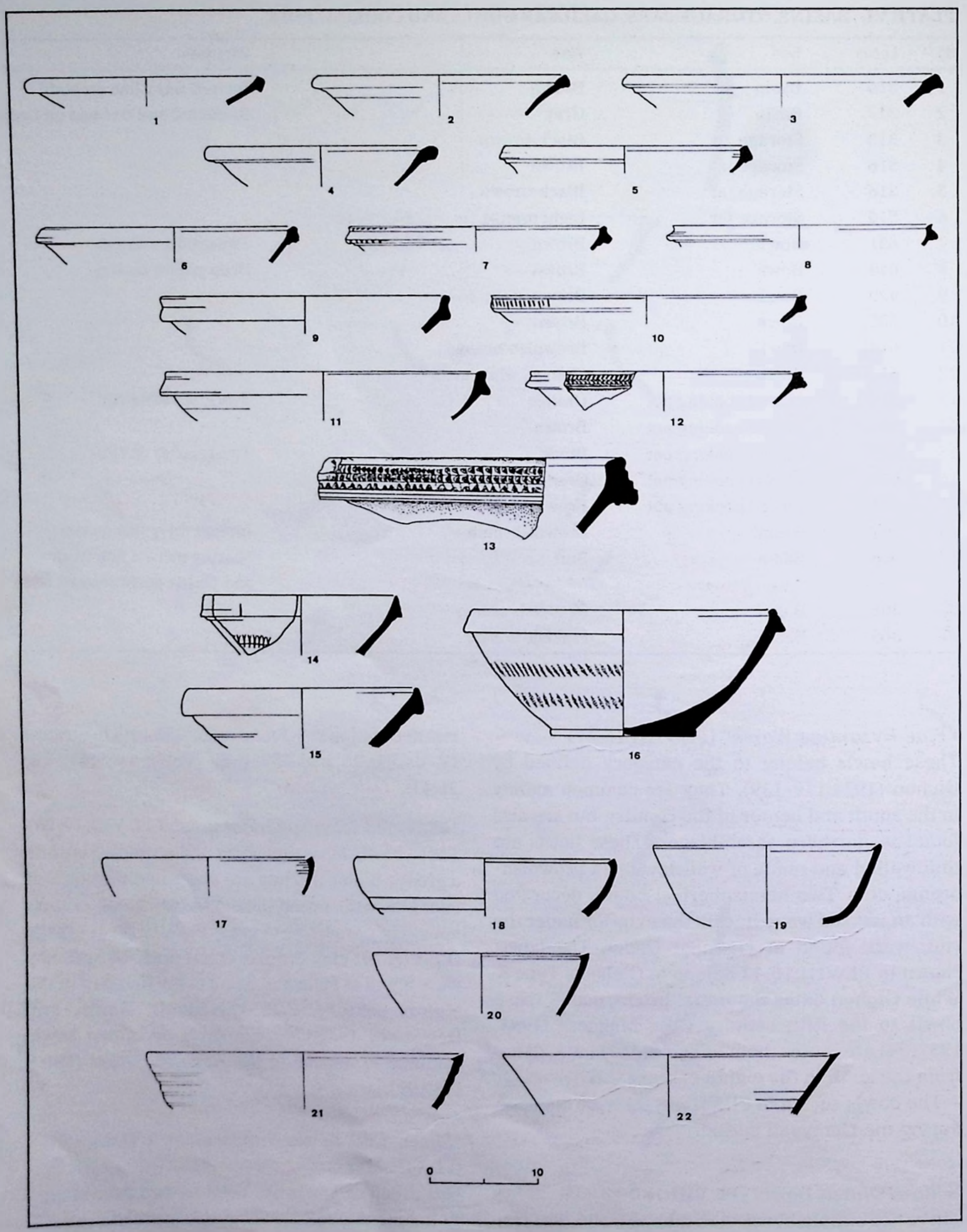
"Fine Byzantine Wares" (Pl. VIIII:16-17)
These bowls belong to the category defined by Gichon (1974:119-139). They are common mainly in the south and center of the country, but are also found in northern assemblages. These bowls are thin walled and made of well-levigated brownish-orange clay. Two hemispherical bowls, decorated with an incised wavy line on the exterior under the rim, were found at Hammat Gader. The bowls shown in Pl. VIII:16-17 belong to Gichon's Type 8. While Gichon dates the initial production of these bowls to the fifth century C.E., Magness (1993: 193-194) attributes them to Type 1 Variant A, dated from the sixth to the eighth century C.E.

The bowls shown in Pl. VIII:18-24 were common during the Umayyad period.

White-Painted Bowls (Pl. VIII:18)
There are simple bowls with ribbed walls. The rim is painted with white lines. A bowl with an identical rim decoration was found at Capernaum in Stratum IV, dating to 650-750 C.E. (Peleg 1989:43, Fig. 21:43).

Decorated Hemispherical Bowls (Pl. VIII:19-20)
These bowls have thin walls and a simple rim with a groove under it. They are decorated with incised triangles with round pieces of clay stuck to their apex. They are made of gray (Pl. VIII:19) or orange (Pl. VIII:20) clay. Similar bowls made of buff clay were found at Pella and dated to the first half of the eighth century C.E. (McNicoll, Smith and Hennessey 1972:174). Similarly decorated bowls continue to appear in the Abbasid period (Peleg 1989:99).

"Sliced-Cut" Bowls With Geometric Designs (Pl. VIII:21-23)
This group of bowls has been termed "sliced cut" by Rahmani (1983:22). They are made of gray (Pl. VIII:23) or light orange (Pl. VIII:22) clay. Peleg



VII. Late Roman Ware bowls or lids.

PLATE VII. LATE ROMAN WARE BOWLS OR LIDS

No.	Locus	Type	Ware	Decoration
1	730	Bowl	Orange	
2	910	Bowl	Red, white grits	
3	308	Bowl	Orange	
4	908	Bowl	Orange	
5	905	Bowl	Orange	
6	315	Bowl	Pinkish-orange	
7	322	Bowl	Orange, red-orange slip	Decorated on rim
8	322	Bowl	Orange, red-orange slip	
9	107	Bowl	Pinkish-orange, red slip	
10	906	Bowl	Orange	Rouletted on rim
11	305	Bowl	Orange, red slip	
12	606	Bowl	Red	Rouletted on rim
13	310	Bowl	Orange	Rouletted on rim; thickened grooved rim
14	106	Bowl	Red	Rouletted on body
15	305	Bowl	Brown	
16	320	Large bowl	Pink	Rouletted on body
17	305	Bowl or lid	Grayish-brown	
18	106	Bowl or lid	Orange, white grits	
19	616	Bowl or lid	Orange	
20	606	Bowl or lid	Brown	
21	322	Bowl or lid	Orange, white grits	
22	910	Bowl or lid	Orange-brown	

(1989:54) dated these bowls to the Umayyad period (650-750 C.E.) on the basis of the finds from Capernaum and other sites. Magness (1994:202-204) dated them from the mid-eighth century to the end of the ninth century C.E., while in Pella such bowls are found in later, Abbasid levels (Reilly 1993:215, Fig. 29:5-6).

Red-Painted Goblets (Pl. VIII:24)

These goblets are made of a light-colored clay and have a red-painted exterior. They are common in northern Palestine and Transjordan mainly from the end of the Umayyad period (toward the middle of the ninth century C.E.) (Magness 1994:202-204). At Capernaum, similar goblets were found in levels dating from the end of the Byzantine period to the Abbasid period (Peleg 1989:51-54). At Pella, similar goblets become increasingly common in the mid-eighth century C.E., continuing into the ninth century C.E. (Reilly 1993:213; Fig. 23:3-4).

Basins (Pls. IX, X)

The basins may be divided into two groups: orange, coarse ware basins, some handmade (Pl. IX:1-6), and gray wheel-made basins (Pl. IX:7-9, Pl. X).

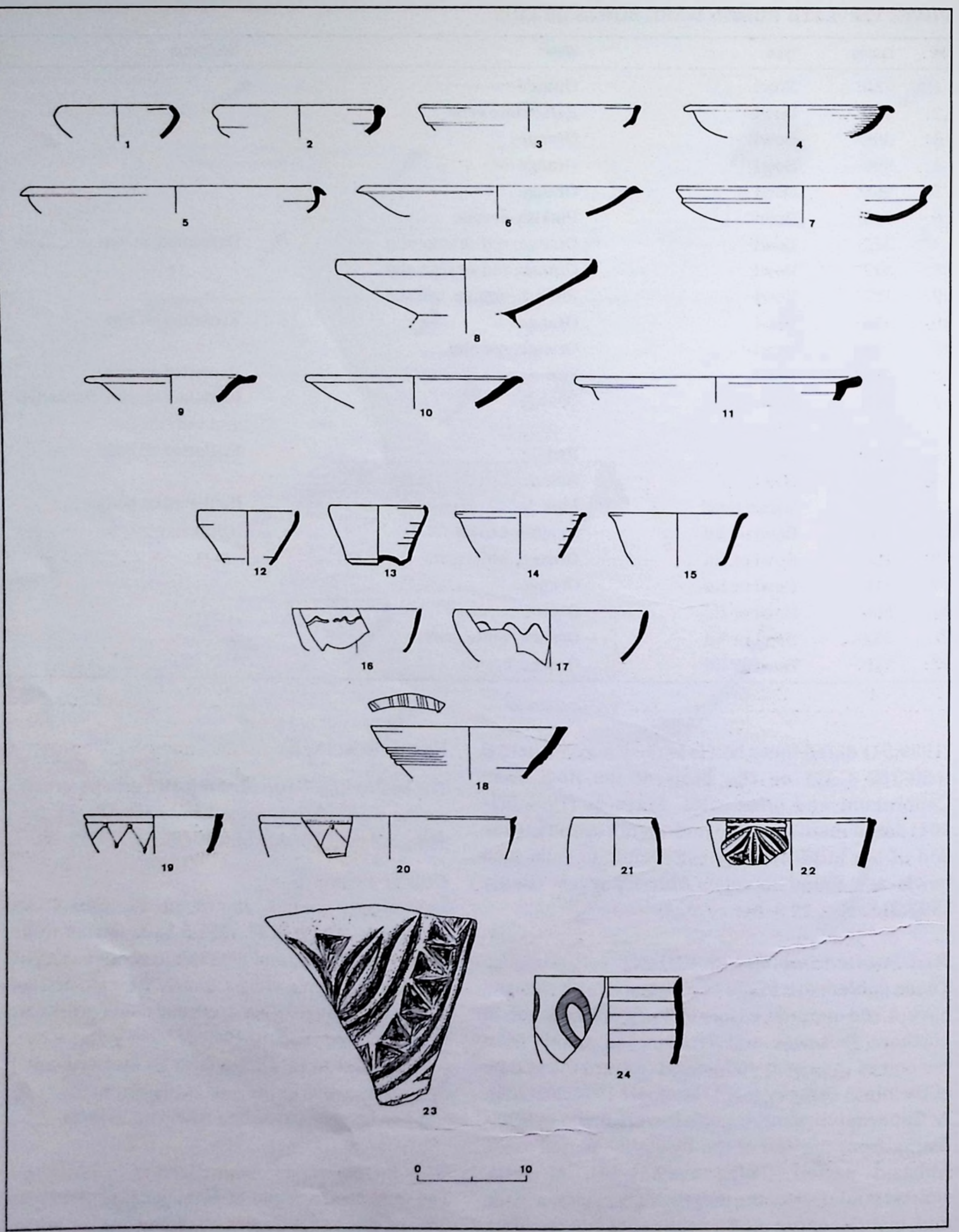
Orange Basins

The orange basins shown in Pl. IX:1-4 are handmade. Those in Pl. IX:1-3 have sloping walls, a broad flat base, and a simple rim. Two of them (Pl. IX:1, 3) have ridges under the rim. Similar basins were found at Nazareth and dated to the Late Roman period (Bagatti 1969:297-299).

The basins in Pl. IX:5-6 have an inverted collar rim, a carination at the join of the rim to the body, and two handles extending from rim to body.

Gray Basins

The gray basins found at Hammat Gader may be divided into two different groups according to rim morphology:



VIII. Local bowls.

PLATE VIII. LOCAL BOWLS

No.	Locus	Type	Ware	Decoration
1	713	Bowl	Light brown	
2	704	Bowl	Brownish-orange	
3	616	Bowl	Orange	
4	305	Bowl	Gray, white grits	
5	616	Bowl	Orange	
6	613	Bowl	Orange	
7	606	Bowl	Orange	
8	327	Bowl	Orange	
9	613	Bowl	Orange	
10	315	Bowl	Buff	
11	631	Bowl	Brownish-orange	
12	308	Bowl	Orange, white grits	
13	305	Bowl	Orange	
14	616	Bowl	Orange	
15	605	Bowl	Orange	
16	909	Bowl (LBW)	Orange	
17	613	Bowl	Orange	
18	803	Bowl	Gray	Painted in white
19	106	Bowl	Orange	Incised zigzag applied on body
20	704	Bowl	Gray	
21	106	Bowl	Buff, gray core	
22	106	Bowl	Gray	Deep roulette
23	314	Bowl	Orange	"
24	106	Goblet	Brownish-orange	Painted in red

1. The first group has a delicate ledge rim. The basins are decorated with a drill (Pl. IX:7), multiple combing (Pl. IX:8-9), or finger impression on the rim (Pl. IX:9). The basin shown in Pl. IX:7 is similar to the one found at Pella in an Umayyad assemblage (McNicoll, Smith and Hennessey 1982:Pl. 149:7).
2. The gray basins in Pl. X have a thickened bulbous rim and combed sides. They are common in assemblages dating from the end of the Byzantine period to the Umayyad period. Similar basins were found at Capernaum in Strata IV and III, dating to 650-850 C.E. (Peleg 1989:Pl. 54-59).

Cooking Vessels

High-Necked Cooking Pots (Pl. XI)

The most common cooking pots found have a ribbed or smooth high neck, a globular, thin-walled body, round base, and handles extending from rim to shoulder. They are made of coarse clay.

High-necked cooking pots were found at Capernaum in Strata IV-II, dated to the second half of the seventh to the mid-eighth century C.E. (Peleg 1989: 69, Fig 52:4-6).

Similar cooking pots belong to Type "C3" of Loffreda (1974:46), dating to the Late Roman and Byzantine periods. Despite their uniquely miniature size, the thin-walled cooking pot shown in Pl. XI:9 belongs to the same period.

Peleg (1989:79) claims that cooking pots with an unribbed neck and bevelled rim become typical only from the Umayyad period onward.

Lids (Pl. XII:1-3)

Lids are common in numerous assemblages from the Late Roman to the Umayyad periods. The continuity of shape makes it difficult to determine their chronology and typology. The lid shown in Pl.

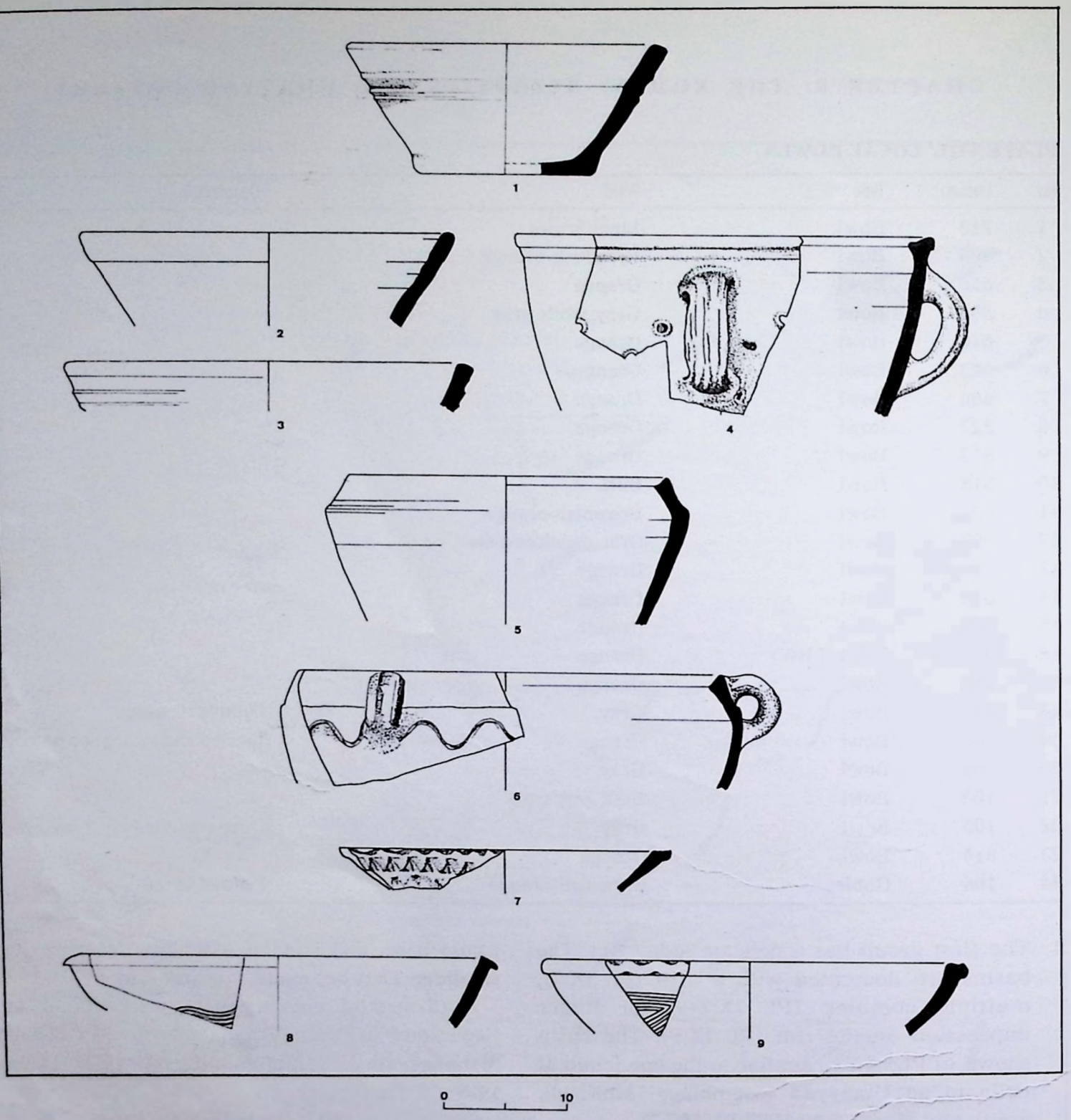


PLATE IX. ORANGE AND GRAY BASINS

No.	Locus	Type	Ware	Decoration
1	616	Basin	Grayish-brown, black and white grits	
2	101	Basin	Grayish-orange	
3	308	Basin	Grayish-orange, black and white grits	
4	803	Basin	Light gray	
5	803	Basin	Whitish-gray	
6	809	Basin	Brown	
7	106	Basin	Gray	Deep roulette
8	327	Basin	Gray	Combed wavy line
9	106	Basin	Brownish-gray	Combed wavy line and finger imprints on rim

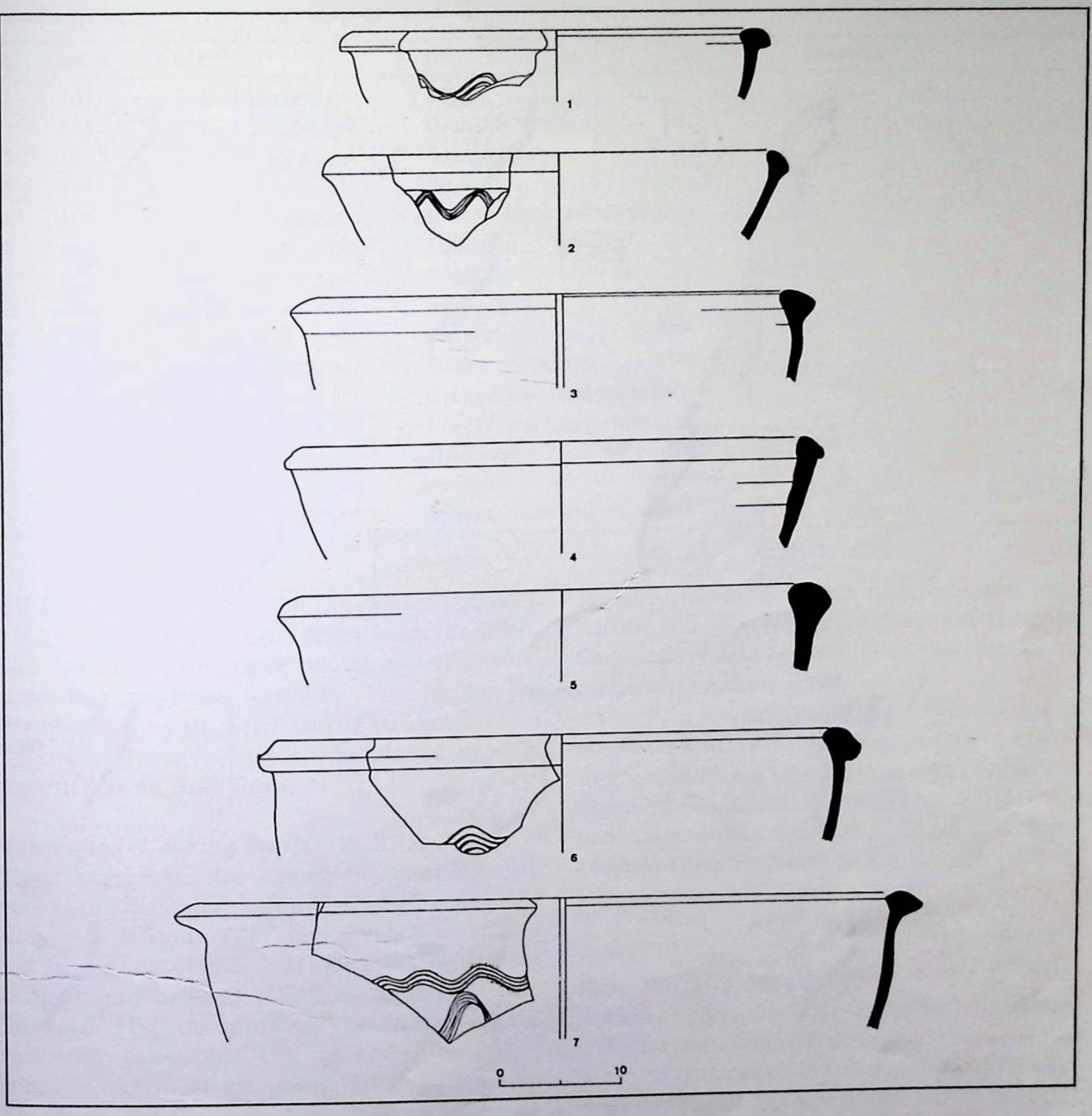
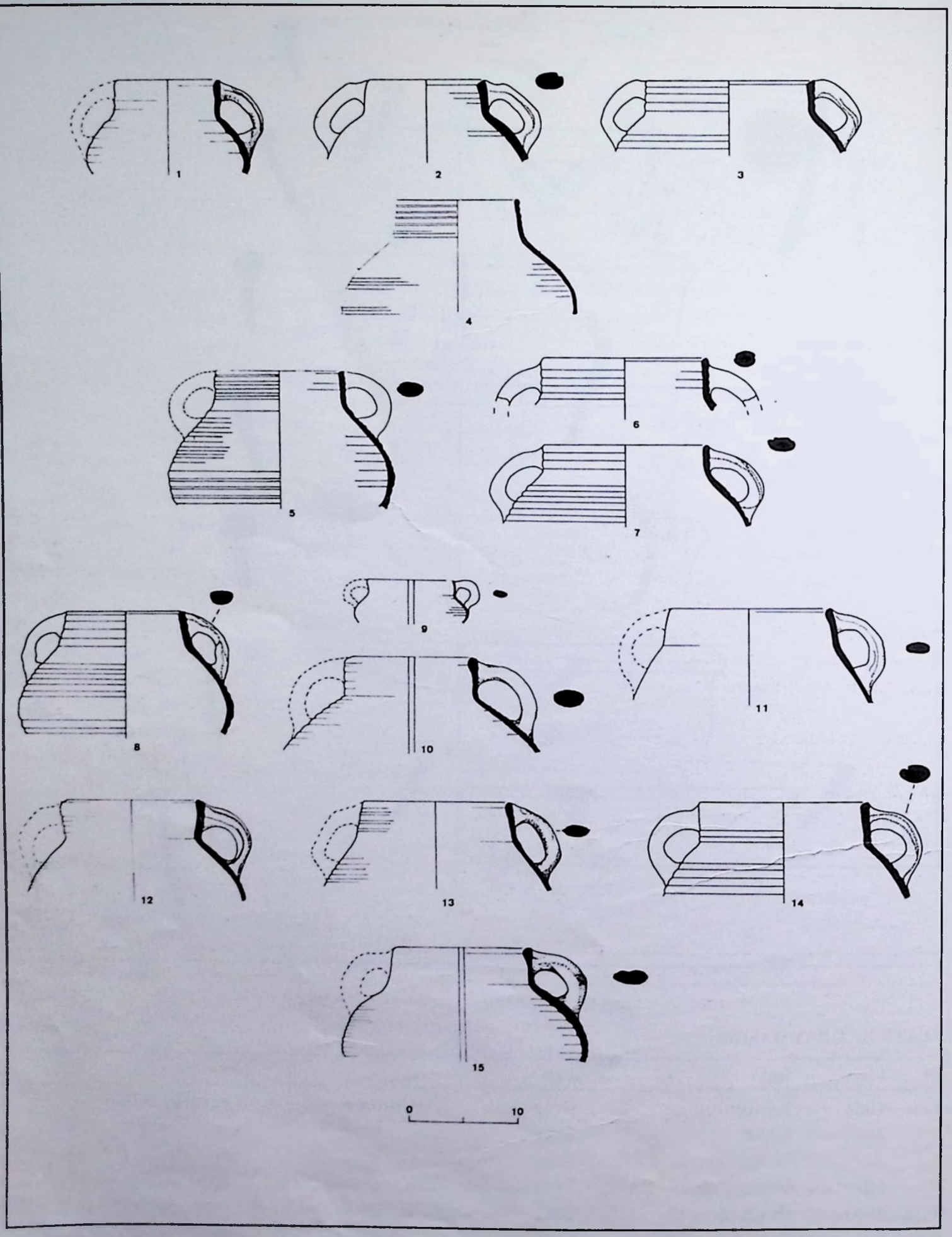


PLATE X. GRAY BASINS

No.	Locus	Type	Ware	Decoration
1	106	Basin	Gray	Combing on body
2	106	Basin	Gray	"
3	327	Basin	Gray	
4	101	Basin	Brownish-gray, black and white grits	
5	106	Basin	Gray	Combing on body
6	803	Basin	Gray	"



XI. Closed cooking pots.

PLATE XI. CLOSED COOKING POTS

No.	Locus	Type	Ware	Decoration
1	704	Closed cooking pot	Brown	
2	106	Closed cooking pot	Orangish-brown	
3	105	Closed cooking pot	Orangish-brown	
4	106	Closed cooking pot	Orange	
5	106	Closed cooking pot	Orange, black and white grits	
6	106	Closed cooking pot	Light gray	
7	106	Closed cooking pot	Brown	
8	104	Closed cooking pot	Brownish-gray	
9	301	Closed cooking pot	Grayish-orange	
10	606	Closed cooking pot	Brown, white grits	
11	730	Closed cooking pot	Orange, black and white grits	
12	606	Closed cooking pot	Orange, black and white grits	
13	704	Cosed cooking pot	Dark brown	
14	104	Closed cooking pot	Orange	
15	606	Closed cooking pot	Orange, black and white grits	

XII:1 is unribbed with a flat rim, while those in Pl. XII:2-3 are ribbed with an everted ledge rim. These lids are similar to those found at Capernaum. According to Peleg (1989:71, Fig. 52:35), the unribbed lid in Pl. XII:1 should be considered a Byzantine form, whereas the second type is regarded as an Arab form.

Casseroles (Cooking Bowls) (Pl. XII:4-13)
These casseroles are among the most common vessels in assemblages from the Late Roman to the Umayyad period. They are divided into three subclasses (see above). It is interesting to note that in the assemblage under the floor, dating to the Late Roman and beginning of the Byzantine periods, the carinated casseroles (Pl. III:32-34) are more common, while in the group dating to the Late Byzantine and Umayyad periods, deep casseroles with rounded walls are more common.

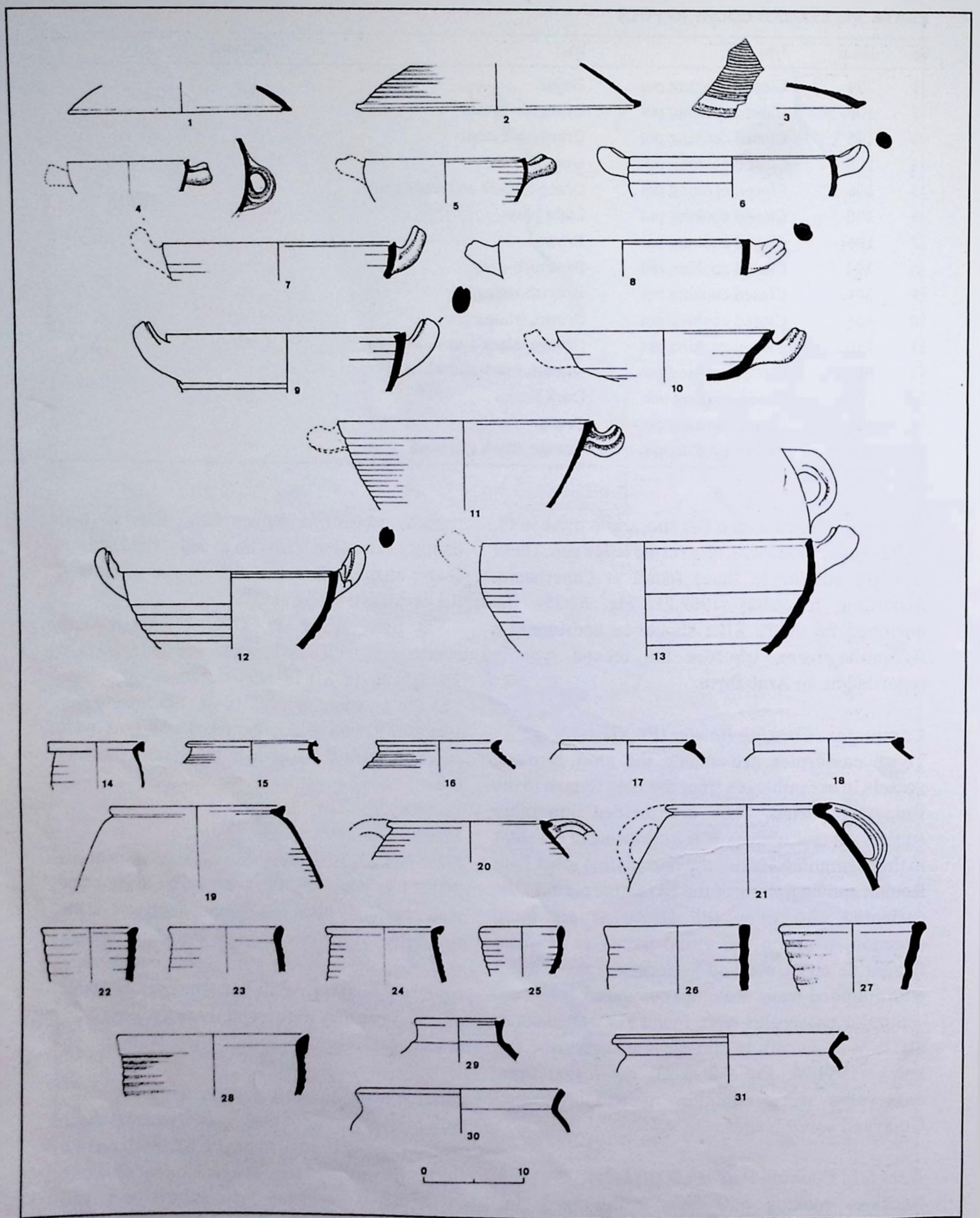
Similar casseroles were found at Capernaum in Strata V-I (seventh to mid-eleventh century C.E.). Peleg (1989:70, Fig. 52:20-23) notes that these casseroles were common in Byzantine and Umayyad assemblages.

Neckless Cooking Pots (Pl. XII:14-21)
Neckless cooking pots have a thickened rim, sloping or rounded shoulders, a globular body (usually ribbed), a convex base, and two loop handles extending from rim to body. The Hammat Gader assemblage contains three rim variants of the neckless cooking pot.

The first variant (Pl. XII:14-17) has a sharp everted rim, with a plain or grooved upper surface. The second (Pl. XII:18) has a thickened square rim. The third variant (Pl. XII:19-21) has a wide rim, sometimes with a depression. These pots were common from the fourth to the seventh century C.E.

Pipes
Plate XII:22-28 depicts vessels similar to those defined as pipes (Pl. IV:17-23) in the assemblage under the stone floor; this definition is based on the similarity to the pipes revealed at Gadara. Though at Gadara these objects were dated up to the fifth century C.E., it is possible that they appeared later as well, since they were found above the stone floor at Hammat Gader.

Miscellaneous Cooking Pots (Pl. XII:29-31)
An additional group of cooking pots includes those with a slanting everted neck (Pl. XII:30-31) and a thick, often grooved rim. The cooking pot shown in Pl. XII:29 is carinated between the neck and shoulder. Similar cooking pots found at Pella were



XII. Lids, casseroles, cooking pots and pipes.

PLATE XII. LIDS, CASSEROLES, COOKING POTS AND PIPES

No.	Locus	Type	Ware	Decoration
1	305	Lid	Orange, white grits	
2	711	Lid	Brown	
3	106	Lid?	Brownish-gray	
4	327	Casserole	Orange	
5	606	Casserole	Orange	
6	106	Casserole	Brownish-gray	
7	910	Casserole		
8	106	Casserole	Brown	
9	101	Casserole	Orangish-brown	
10	305	Casserole		
11	606	Casserole	Orange, black and white grits	
12	106	Casserole	Orangish-brown	
13	106	Casserole	Orangish-brown	
14	606	Neckless cooking pot	Gray	
15	305	Neckless cooking pot	Orange, white grits	
16	606	Neckless cooking pot	Orangish-brown	
17	322	Neckless cooking pot	Orange, white grits	
18	730	Neckless cooking pot	Orange, quartz grits	
19	606	Neckless cooking pot	Orange	
20	305	Neckless cooking pot	Orange, white grits	
21	803	Neckless cooking pot	Orange	
22	614	Pipe	Pinkish-orange	
23	327	Pipe	Pink	
24	606	Pipe	Orange, black and white grits	
25	606	Pipe	Orange	
26	614	Pipe	Orange	
27	612	Pipe	Buff-orange	
28	315	Pipe	Pink	
29	106	Cooking pot	Buff	
30	106	Cooking pot	Buff	
31	106	Cooking pot	Buff	

dated to the Late Byzantine period (Smith et al. 1973:223).

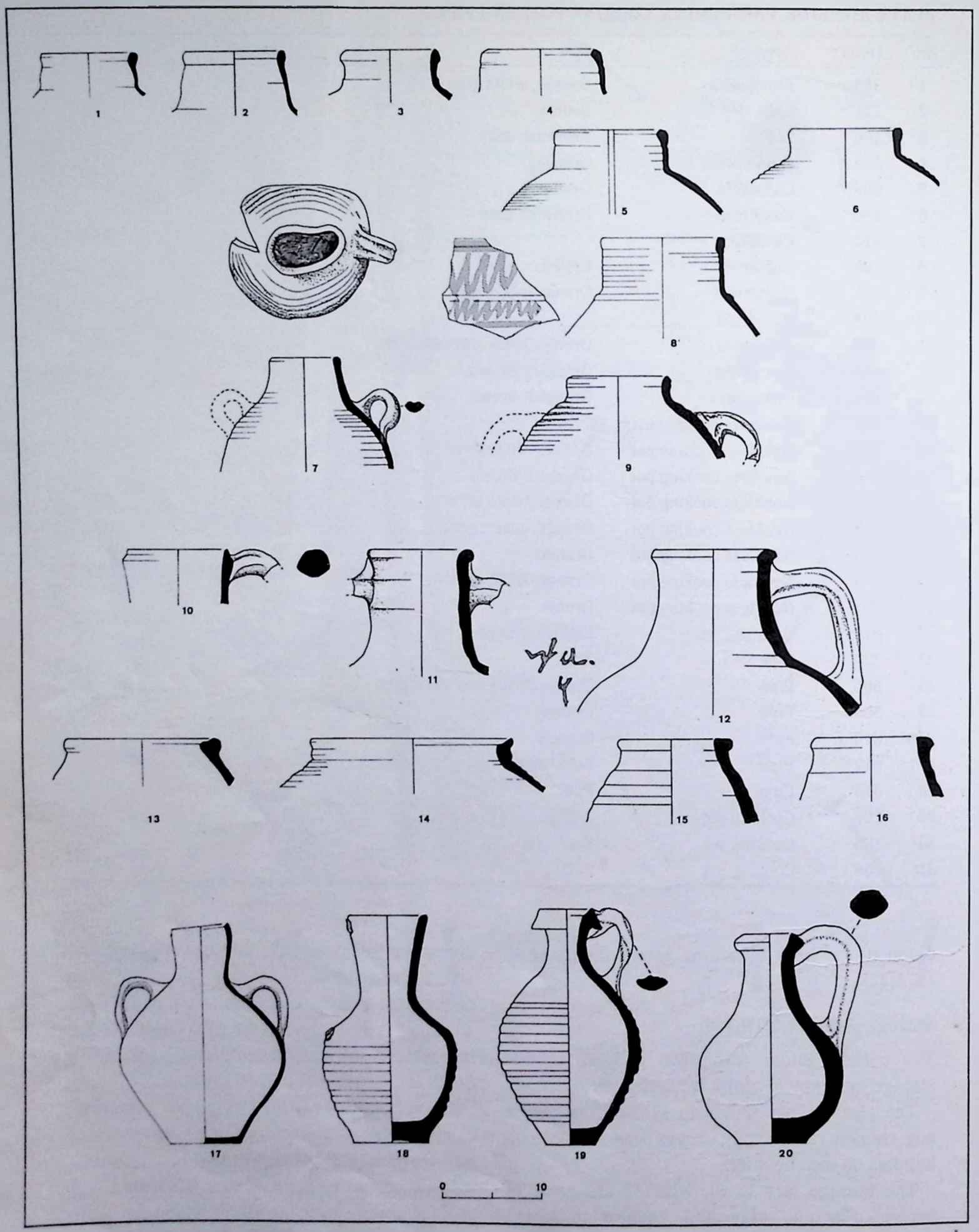
Storage Jars (Pl. XIII:1-6)

The pottery under discussion includes several storage jars typical of the Byzantine period.

The storage jars shown in Pl. XIII:1-6 have a bag-shaped, ribbed body, convex base, and two loop handles on the shoulder.

The storage jars in Pl. XIII:1-2 are made of brownish-orange clay and have a thickened everted rim. These jars represent a continuation of an earlier tradition (Late Roman period) of jars with an everted rim, though now lacking the ridge on the neck. A similar storage jar was found at Pella and dated from the end of the sixth century to the beginning of the seventh century C.E. (McNicoll, Smith and Hennessey 1982:Pl.139:9).

The vessels shown in Pl. XIII:4-5 are "northern" or "Beth Shean" storage jars. They are made of well-levigated black or brown clay (metallic ware), with a short inverted rim. Similar jars were found at Capernaum in all the strata dating from the seventh century C.E. onward (Peleg 1989:73, Fig.



XIII. Storage jars, amphorae and juglets.

PLATE XIII. STORAGE JARS, AMPHORAE AND JUGLETS

No.	Locus	Type	Ware	Decoration
1	613	Storage jar	Orange, white grits	
2	106	Storage jar	Orange	
3	322	Storage jar	Brownish-gray	
4	613	Storage jar	Gray	
5	613	Storage jar	Orange, white grits	
6	315	Storage jar	Grayish-orange	
7	803	Storage jar	Buff	
8	803	Storage jar	Reddish-orange	Painted in red
9	616	Storage jar	Buff	
10	906	Amphora	Orange	
11	909	Amphora	Gray, quartz grits, light slip	
12	900	Amphora	Orange, black and white grits	Inscription
13	910	Pithos	Gray	
14	315	Pithos	Pinkish-orange	
15	101	Pithos	Pinkish-cream	
16	612	Pithos	Light brown, black grits	
17	511	Juglet	Orange	
18	501	Juglet	Orange	
19	506	Juglet	Pinkish-orange	
20	502	Juglet	Pinkish-orange, black grits	

60:1). A similar storage jar was found in the Odeon at Pella, dated from the sixth to the beginning of the seventh century C.E. (Smith 1989:107, Pl. 48:15).

The storage jar shown in Pl. XIII:6 belongs to Capernaum Type "C1," dating to the Byzantine period (Loffreda 1974:44-45).

Umayyad Storage Jars (Pl. XIII:7-9)

The buff storage jar shown in Pl. XIII:7 has a high neck and a rim which was distorted during firing. Buff storage jars are common from the Umayyad period and are especially frequent during the Abbasid period (Peleg 1989:90).

The red-painted storage jar shown in Pl. XIII:8 belongs to a family termed "Red-Painted Ware." The jar has a long straight neck, a thickened rectangular rim, and a ridge on the neck.

Similar storage jars with varied rim shapes were found at Pella and dated to the Umayyad period (Smith et al. 1989:113), and also in Stratum IV (650-750 C.E.) at Capernaum (Peleg 1989:78, Fig. 13, 22, 23).

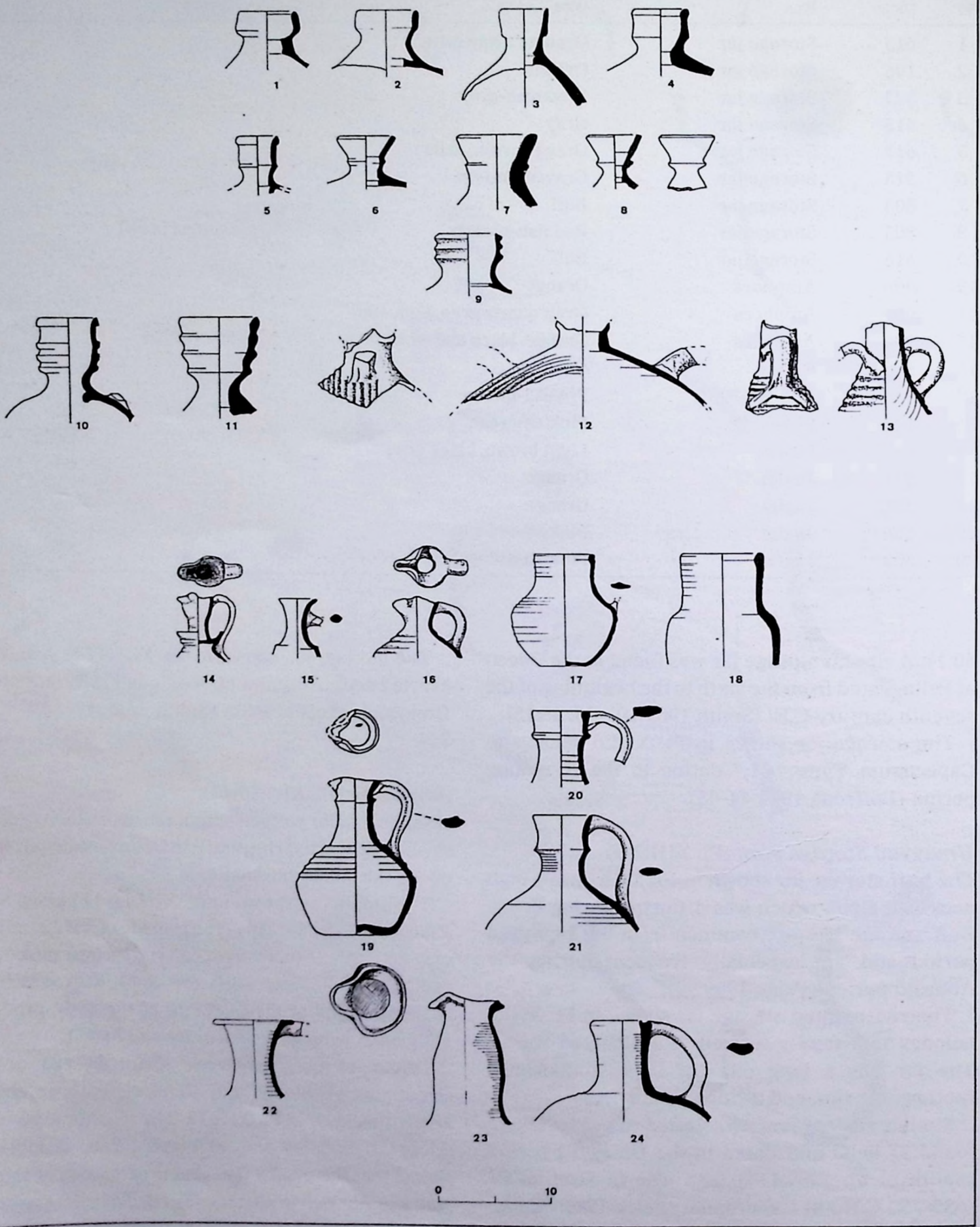
The storage jar shown in Pl. XIII:9 has a short everted neck. A similar jar was found in Byzantine-Umayyad levels at Pella (Smith et al. 1973:Pl. 45: 324).

Amphorae (Pl. XIII:10-12)

Hammat Gader yielded amphorae with a high neck, thickened everted rim, and handles extending from under the rim to the shoulder.

The amphorae shown in Pl. XIII:11-12 belong to Peacock's Type 44. This type is made of hard sandy clay with calcite inclusions, colored creamy pink or reddish-yellow. The walls are thick with widely spaced ribbing at the midpoint of the body, gradually narrowing at the shoulder and base.

Traces of cursive Greek script in red are sometimes visible on the shoulder, e.g., on the amphora shown in Pl. XIII:12. The amphorae have thickened handles and an everted rim. Peacock claims that the production center of vessels of this type was Antioch in northern Syria. They date from the beginning of the fifth century to the mid-



XIV. Flasks and jugs.

seventh century C.E., and were apparently used in the oil trade (Peacock and Williams 1986:185-186).

Pithoi (Pl. XIII:13-16)
The pithoi have thick walls and rim, and are handmade of coarse clay. In Strata IV and VI at Khirbet Shema', similarly shaped pithoi were found; they were made in a local pottery workshop and date from the fourth to ninth century C.E. (Meyers et al. 1976:238-241).

Flasks, Jugs, Juglets and Small Storage Jars (Pl. XIII:17-20)

The numerous flasks, jugs, and juglets found in this assemblage are noteworthy. It is possible that some of these vessels (especially the juglets) contained oils and perfumes used in the baths.

Plate XIII:17-20 shows juglets which apparently contained perfume. No parallels were found for these juglets.

Flasks (Pl. XIV:1-13)
The flasks may be divided into several types differentiated by the neck and rim morphology.

The first group (Pl. XIV:1-4) has a wide mouth, narrow neck, and broad body. Such flasks were found in several assemblages dating to the Byzantine period and continue to appear in the Umayyad period.

Similar flasks were found at Capernaum in Strata V-III dating to 600-800 C.E. The typical flask during the Umayyad period is denoted the "Pilgrim's Flask." It is made of buff clay and retains the shape from the Byzantine period (McNicoll, Smith and Hennessey 1982:Pl. 144:1).

The second group of flasks (Pl. XIV:5-9) has a flaring neck and a ridge at mid-neck. The flask

PLATE XIV. FLASKS AND JUGS

No.	Locus	Type	Ware	Decoration
1	618	Flask	Orange	
2	726	Flask	Orange	
3	327	Flask	Orange	
4	106	Flask	Brownish-orange	
5	106	Flask	Light brown	
6	106	Flask	Gray	
7	106	Flask	Buff	
8	803	Flask	Orangish	
9	704	Flask	Orangish	
10	106	Flask	Buff	
11	104	Flask	Brownish-orange	
12	617	Flask	Brown	
13	606	Flask	Orange	
14	327	Jug	Orange	Trefoil rim
15	314	Jug	Brownish-orange	
16	629	Jug	Brown	Trefoil rim
17	327	Jug	Orange	
18	305	Jug	Orange	
19	600	Jug	Orange	
20	106	Jug	Orange	
21	327	Jug	Orange	
22	606	Jug	Orange	
23	616	Jug	Orange	Trefoil rim
24	606	Jug	Orange	

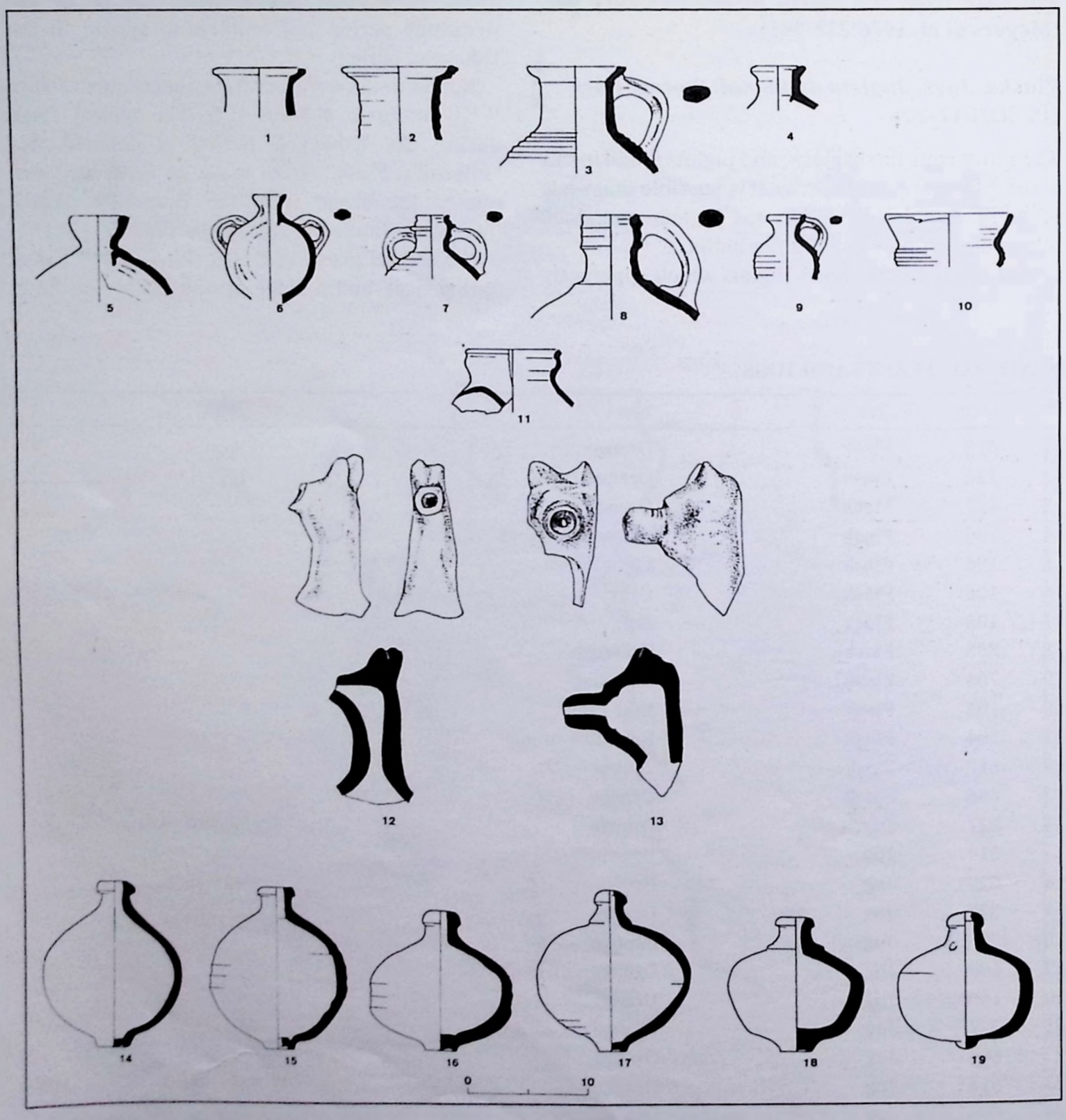
shown in Pl. XIV:9 is made of coarse clay. A similar flask was found at Khirbet el-Mefjer on the floor of the entrance hall with material dated to the beginning of the eighth century C.E. (Baramki 1944:Pl. 15:7).

The third group (Pl. XIV:10-12) has a narrow ridged neck and a broad body. Similar flasks were found at Khirbet el-Mefjer (Baramki 1944:Fig. 5:10-13, Pl. XXI:1).

The flask shown in Pl. XIV:13 has a piriform body and a unique handle.

Jugs (Pl. XIV:14-24)

The first group shown in Pl. XIV:14-16 contains



XV. Umayyad assemblage and "grenades."

small jugs. The jugs in Pl. XIV: 14, 16 have a trefoil rim and are made of metallic ware. No parallels were found for these jugs.

The two jugs shown in Pl. XIV:17-18 have a long, wide cylindrical neck. The one shown in Pl. XIV:17 has thin walls made of well-levigated clay. The jug shown in Pl. XIV:18 is of coarser ware and has a cylindrical body. Jugs of this type are common in Umayyad assemblages; the ware may be metallic (Smith et al.1989:Pl. 61:2) or coarse (McNicoll, Smith and Hennessey 1982:Pl. 145:2).

The jugs shown in Pl. XIV:19-21 have a long neck with a ridge; the upper neck and rim are flaring. A large handle extends from the rim to the shoulder. The body is ovoid and the base is the typical ompholos of the Umayyad period. Similar jugs are common in Umayyad assemblages in Transjordan, where the ware is typically metallic and the body is white-painted. These jugs generally have a spout. They were dated at Pella to the second quarter of the eighth century C.E. (Smith et al.1989:117, Fig. 61, 9-10).

The jugs shown in Pl. XIV:22-24 are made of coarse orange clay. These jugs have a high neck and a handle extending from rim to shoulder. The jug in Pl. XIV:23 has a trefoil rim.

Locus 713 – an Umayyad Assemblage
(Pl. XV:1-13)

Locus 713 yielded a concentration of jugs, flasks and numerous other vessels dating to the Umayyad period. Such a large concentration of Umayyad jugs and flasks raises the possibility that the vessels had been placed on shelves which collapsed during the great earthquake of 749 C.E. The jugs and flasks are made of soft, very pale brown clay which, according to Smith et al. (1989:112), is typical of the Umayyad period.

The jugs shown in Pl. XV:1-3 have a gutter rim, high cylindrical neck, sloping shoulders, and a handle extending from rim to shoulder. A similarly shaped metallic ware jug was found at Pella and dated to the first quarter of the eighth century C.E.

PLATE XV. UMAYYAD ASSEMBLAGE AND GRENADES

No.	Locus	Type	Ware	Decoration
1		Jug	Light brown	
2		Jug	Light brown	
3		Jug	Light orange	
4		Flask	Brown	
5		Flask	Orange	
6		Flask	Light brown	
7		Flask	Brown	
8		Flask	Brown	
9		Flask	Light brown	
10		Juglet	Grayish	
11		Juglet	Brown	Painted in red
12		Zoomorphic	Light brown	
13		Zoomorphic	Light brown	
14	803	"Grenade"	Well-levigated orange	
15	803	"Grenade"	Well-levigated grayish-brown, white grits	
16	803	"Grenade"	Brown, white grits	
17	803	"Grenade"	Well-levigated brown	
18	501	"Grenade"	Black with grits	
19	501	"Grenade"	Well-levigated orange, possibly with brown slip	

(Smith et al. 1989:112, Pl. 54:8).

The flasks shown in Pl. XV:4-6 have a flaring neck, a round body composed of two parts, and two loop handles on the shoulder. The flask in Pl. XV:6 is exceptionally small. Similar flasks dating to the Umayyad period were found at Pella (McNicoll, Smith and Hennessey 1982:Pls. 141:1, 144:1).

No parallels were found for the flasks shown in Pl. XV:7-8, but their ware is similar to that of the jugs and flasks described above.

Metallic Ware Vessels (Pl. XV:9-11)

Several vessels have thin walls. The jug shown in Pl. XV:9 bears a red-painted decoration. Such vessels may be dated to the Umayyad period on the basis of their presence in this assemblage.

Zoomorphic Vessels (Pl. XV:12-13)

The zoomorphic vessels, dated to the Umayyad period, are similar to those found at Khirbet el-Mefjer (Baramki 1944:Fig. 16:18-20) and Ramla (Rosen-Ayalon and Eitan 1969).

Sphero-Conical Vessels (Pl. XV:14-19)

A large concentration of vessels termed "grenades" was found at Hammat Gader, mainly in Locus 803, where six intact ones and 35 rim fragments were discovered. Two intact vessels were found in Locus 501. A volume check has shown that two grenades (Pl. XV:18-19) had a capacity of ca. 200 ml. each. These vessels have a thickened rim and a short narrow neck, a spherical body, thick walls, and a prominent base, often ring-shaped. The clay is usually well-levigated and fired brown, orange or black.

These vessels are common at many Islamic sites from the Umayyad period on (Ettinghausen 1965: 224). In many instances, the walls are decorated, though this was not the case at Hammat Gader. Four different explanations for the function of this vessel have been proposed:

1. They contained a flammable substance such as kerosene and were used as hand grenades.
2. They contained a substance (pyrites) which was used for striking fires.
3. They contained mercury which was used to prepare medicine or medicinal herbs.
4. They contained precious liquids such as perfume or medicine.

Although the numerous grenades found in the baths at Hammat Gader are undecorated, we think that they were indeed used as containers for perfumes and oils.

SUMMARY

The dating of the Hammat Gader pottery was based on a study of ceramic parallels from various sites in northern Palestine and eastern Transjordan, such as Capernaum, Khirbet Shema', Meiron, Jalame, Beth Shean, Bet Yerah, Nazareth, Caesarea, Gadara, Pella and Gerasa. The great similarity between the vessels found at the above-mentioned sites and those revealed in the baths complex implies that most of the latter were locally produced. The only imported vessels found at the site are the Late Roman Ware, as well as amphorae and jugs.

The similarity between the ceramic finds, especially the pipes, from the baths at Gadara and Hammat Gader is not surprising in light of the geographical proximity of the two sites.

The large amount of cooking and storage vessels revealed in the baths complex is enigmatic. It is possible that the material found beneath the stone floor represents a deliberate fill brought from somewhere else. If this is so, one has yet to explain why such a large amount of this pottery was located above the floor. It appears that during the final phase of its use, the structure was subdivided into small rooms, possibly stores, food stands or even living quarters, similar to the "row of shops" in the northern part of Area C. Alongside the domestic vessels, a large amount of small storage vessels was found, such as flasks, jugs, juglets and "grenades." These most likely contained oil and/or perfumes for bathing.

The Hammat Gader assemblage constitutes an important contribution to the study of the common ceramic types in the north of the country and eastern Transjordan from the first to the mid-eighth century C.E.

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CHAPTER 9

LATE CERAMIC TYPOLOGY

Adrian J. Boas

INTRODUCTION

The post-Byzantine pottery of Hammat Gader covers the entire period from the Muslim conquest in 636 C.E. to the 20th century. The pottery from the Umayyad period has already been dealt with and the earliest material discussed here dates from the ninth century, during the period of Abbasid rule. This is not a very large corpus but it is a fairly representative one for the region, particularly of the medieval period, and in addition it contains some lesser known forms.

Most of the 88 sherds included in this report come from the surface or immediately below it down to the Umayyad levels. In spite of the lack of identifiable stratification in these upper layers, this assemblage can tell us something about the period after the *thermae* at Hammat Gader had fallen into disuse, when the site apparently continued to serve only the local population. The pottery divides up into distinct chronological groups but represents what appears to be a continued occupation until late medieval times after which occupation appears to have been primarily of squatters. Of the well-dated wares, 33 are Abbasid-Fatimid (9th-11th century), seven are Abbasid to Crusader (9th-13th century), 32 are Crusader to Mamluk (12th-14th century), 11 are Crusader to modern (12th-20th century), and one is Ottoman (possibly 18th-20th century). We can sharpen this definition somewhat by pointing out what is missing from the corpus. There are none of the typical ceramics of the Turkish period such as Gaza Ware, Drip-Painted bowls, and Manganese-Painted (Canakkale) bowls, no tobacco pipes and no porcelain. The 11 pieces dated from the 12th to the 20th century are handmade wares which appear in the 12th or 13th century and continue into the 20th, but probably are less common after the introduction of the popular Gaza Wares (see Pringle 1986:140). Without any other of the late types present, the handmade wares at Hammat Gader are probably of medieval rather than later date. This would suggest that by the Ottoman period, perhaps even earlier in the 14th century, the settlement at the site was abandoned. From the decline in the ninth century until the medieval period there was some sort of continued use of the baths, as the pottery from this period is comparatively abundant.

The lack of architectural remains and stratified deposits in these levels has dictated a typological arrangement for this report rather than one presenting the wares according to their stratigraphic context. Because there are few publications of medieval and post-medieval ceramics which are based on clearly defined stratigraphic contexts, it is often impossible to be precise about the date of many of the later vessel forms. It is desirable to present as much material as possible from good contexts but it is also important to publish vessels from uncertain loci, if only to draw our attention to the various lesser known forms. That modest task is the aim of this present report.

CORPUS

COARSE WARE

Course wares are the least studied ceramics of the later periods. For this reason, when we are dealing with unstratified deposits or surface finds, it is often difficult or indeed impossible to date these wares. Little can be said about the dating of several of the following vessels except that they are post-Byzantine.

Jars and Jugs

Plate I:1. Jar (L. 200). Rim and neck to shoulder. Diameter: 10.4 cm. Fabric: core 2.5YR/5/0, surface 10R/4/8. The ware has many voids and white and brown inclusions. The form is elongated with folds on the rim exterior and wheel ridges on the interior and exterior.
Period: medieval.
Parallels: Although the rim is more complex, this long-necked amphora is not unlike Bagatti 1947: Fig. 26:7.

Plate I:2. Jar (L. 200). Rim and neck. Diameter: 13.6 cm. Fabric: core 10YR/6/4, surfaces 10R/5/6. There are many large inclusions and voids. The jar has a prominent, double-ridged rim with an impressed band below on the exterior. There are wheel ridges on the interior.
Period: 12th-13th century.
Parallels: Tushingham 1985:Fig. 36:22.

Plate I:3. Jar (L. 200). Rim and neck. Diameter: 14 cm. Fabric: core 5YR/3/1, surfaces 10R/5/4. There are many inclusions and voids. The everted rim has an impressed band below it on the exterior. Similar to above (Pl. 1:2).
Period: medieval.
Parallels: Bagatti 1947:Fig. 26:1.

Plate I:4. Jar (L. 204). Rim and neck. Diameter: 10 cm. Fabric: 7.5YR/4/4. The ware contains very fine inclusions. The jar has an inverted rim and wheel ridges on the exterior.

Plate I:5. Jar (L. 110). Rim. Diameter: 8 cm. Fabric: 5YR/8/4. Soft ware. There are pronounced wheel ridges on the interior and exterior and at the rim on the interior is a prominent ridge.

Plate I:6. Jar (L. 204). Rim and neck. Diameter: 20 cm. Fabric: 7.5YR/5/6. Medium-soft ware with many black inclusions. Straight-walled neck with an everted rim. There are slight wheel ridges.
Period: possibly 12th-13th century.
Parallels: Tushingham 1985:Fig. 40:36; Wightman 1989:Fig. 58:4.

Plate I:7. Jug (L. 101). Rim, neck and shoulder. Diameter: 3.5-4 cm. Fabric: core 7.5YR/6/4, surface 7.5YR/4/4. Trefoil rim.

Plate I:8. Juglet (L. 210). Complete except for the handle. Diameter: 4 cm. Fabric: 2.5Y/7/4. Thin-walled with wheel-ridges low on the body. Shiny coat on exterior and circle of black paint on one side.
Period: possibly 9th-11th century.

COOKING VESSELS

Cooking pots and casseroles of the Byzantine period continue, with little substantial change in form, into the early Islamic period. By the ninth century, however, new types make their appearance in the local assemblages – vessels which continue the traditional forms but introduce new elements and which continue from the 9th century without substantial change until the 13th. The new types which appear in the 9th (or perhaps 8th) century are the globular cooking pot with high lug-handles and the frying pan, a development of the Byzantine casserole. The globular cooking pot is a thinly-potted vessel with strap-handles rising high on either side. Between the strap handles there are often vestigial ledge-handles. Colorless lead glaze is often applied on the interior at the base, apparently serving a function similar to modern teflon coating, to prevent food from sticking to the pot. On the exterior at the shoulder there is often a splash of glaze, not apparently having any functional purpose. Frying pans have a similar arrangement of handles, only these are thicker and oval in section, not unlike those found on Byzantine and Umayyad casseroles. Sometimes these handles are small and pressed against the wall of the pan. Vestigial ledge-handles are attached to the wall or, when the pan has a broad, everted rim, on the rim itself. Colorless lead glaze covers either the interior base alone or the whole of the interior to the rim.

At the end of the 13th century or early in the 14th, the globular cooking pot appears to have been replaced by a thick handmade pot which, while very different in ware and burnished rather than glazed, preserves some similarity in form.

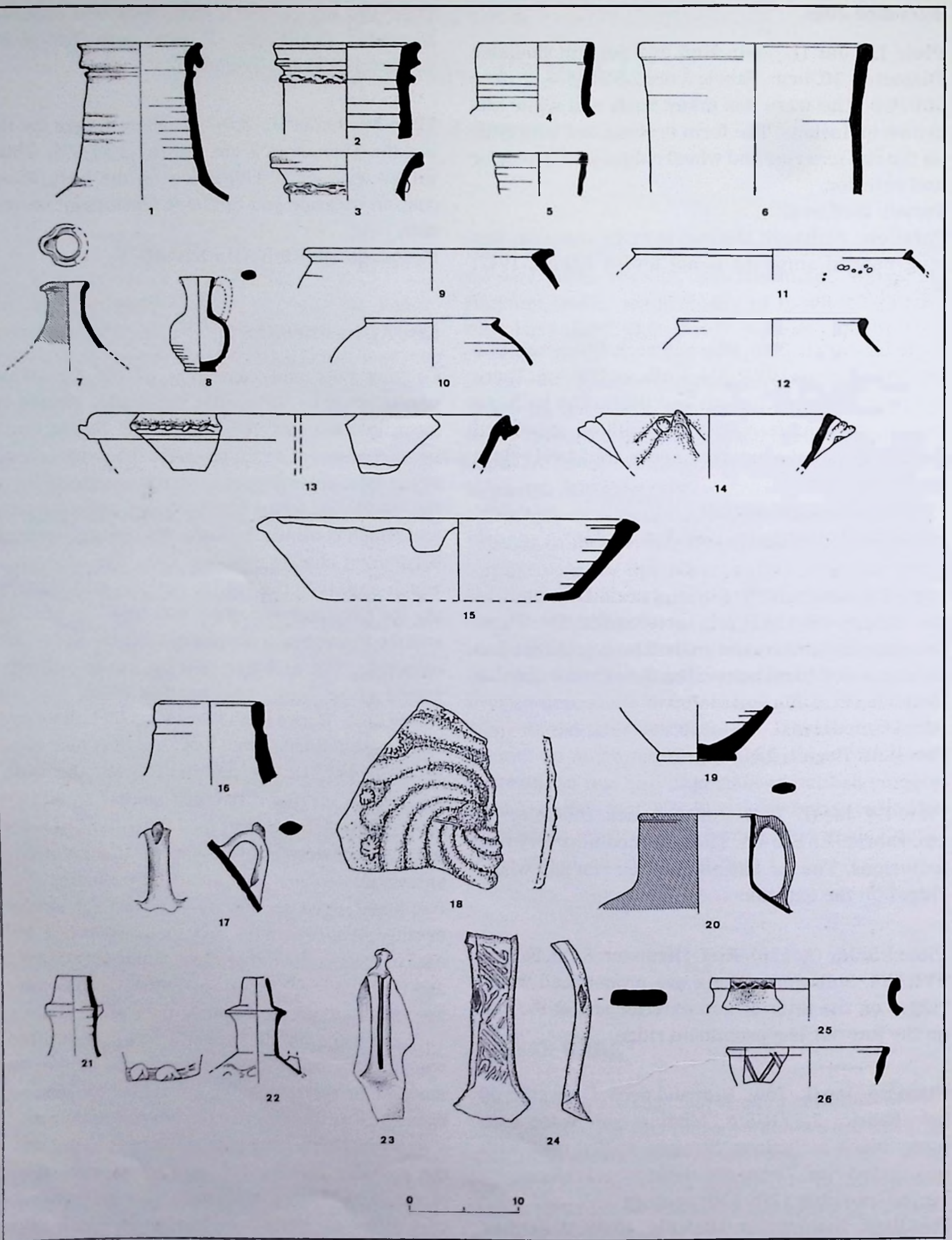


Plate I: Coarse Jars, Jugs, and Glazed Cooking Vessels.

Cooking Pots

Plate I:9. Cooking pot (L. 517). Rim and shoulder. Diameter: 22 cm. Fabric: 10R/5/6. Soft ware with small, white inclusions. Everted rim.
Period: possibly 8th-9th century.
Parallels: Pringle 1984:Fig. 5:24; 1985:Fig. 2:4.

Globular Cooking Pots

Plate I:10. Cooking pot (L. 101). Rim and shoulder. Diameter: 14.3 cm. Fabric: 2.5YR/5/8. Soft ware with fine inclusions including mica and some small voids. Thinly-potted vessel with ridges on the interior.
Period: 9th-late 13th century.
Parallels: Thalmann 1978: Fig. 32:2, 6; Tushingham 1985:Figs. 36:2, 37:15; Pringle 1986:Fig. 48:39, 40, 41, 42; Bagatti 1947:Fig. 29:7; Brosh 1986:Fig. 4:2.

Plate I:11. Cooking pot (L. 101). Rim and shoulder. Diameter: 23 cm. Fabric: 2.5YR/5/8. Fine inclusions including mica and small voids. Traces of lead glaze on the interior and exterior.
Period: 9th-late 13th century.
Parallels: As above (Pl. I:10).

Plate I:12. Cooking pot (L. 700). Rim and shoulder. Diameter: 15 cm. Fabric: 5YR/7/8. Soft ware, thinly potted.
Period: 9th-late 13th century.
Parallels: Pringle 1985:Fig. 2:3, 5, 7; Pringle 1986: Fig. 48:36, 38.

Frying Pans

Plate I:13. Frying pan (L. 204). Rim to base with ledge-handle. Diameter: 34 cm. Fabric: 10R/3/1-10R/5/6. Coarse ware with fine grits. Colorless lead glaze at the base (interior). The rim is everted and triangular in section. On the rim is a narrow, impressed ledge-handle.
Period: 9th-late 13th century.
Parallels: Brosh 1986:Fig. 4:15; Pringle 1985:Fig. 3:10.

Plate I:14. Frying pan (L. 200). Rim to base with handle. Diameter: 24 cm. Fabric: core 10R/3/1, surfaces 10R/5/6. Coarse ware with fine grits. Transparent colorless lead glaze on the interior to the rim. Horizontal strap-handle pressed up against wall.
Period: 9th-late 13th century.
Parallels: Thalmann 1978:Fig. 31:3, 4.

Plate I:15. Frying pan (L. 517). Rim to base (2 pieces). Diameter: 28.5 cm. Fabric: 7.5YR/8/4. Sand-size, white and brick-colored grits. There are some voids. On the interior to just over the rim is a colorless lead glaze. This is a deep, and thickly potted vessel.
Period: 9th-late 13th century.
Parallels: Pringle 1984:Fig. 5:29.

UNGLAZED FINE WARES

There are two principal groups of unglazed fine wares in the late periods: Buff wares and Handmade-Painted wares. It is debatable whether the latter group, in view of its coarseness, should be included as fine ware, but it can perhaps be regarded as such because of the decorative nature of the painted designs.

Buff Ware

Although buff-colored wares are known in early periods, this type of ware really makes its debut as a distinct class in or about the beginning of the 9th century. Jars, basins, bowls and lamps are common forms of this class, but the most distinctive and typical form is the spouted water jug, often with a filter in the neck.

Buff, pale yellow or cream-colored ware is the product of clay taken from iron-free deposits. Iron-free silt turns buff or cream when fired under oxidizing conditions. A jug made of this ware absorbs water and if placed in the sun will perspire, thus cooling the water contained within. This is the reason why this type of ware became popular for the manufacture of water jugs and pilgrim flasks. Occasionally these wares are painted (Caesarea-unpublished) but more typical are molded decoration, stamping, incision and piercing, rouletting or the application of plastic decoration such as clay rings hanging from handles, or crown-like knobs. Incised designs occasionally include inscriptions.

Buff wares continued to be manufactured from the 9th to as late as the 18th century (Raban 1971: 155). By the late 13th century they are considerably different from those of the 9th century. The ware is no longer buff or pale yellow but more often gray or greenish-gray. Designs are more complex and cover much of the vessel.

Jars

Plate I:16. Jar (L. 204). Rim and upper body. Diameter: 10 cm. Fabric: 2.5Y/8/2. Fine inclusions. Medium-soft ware.
Period: 9th-10th century.

Plate I:17. Jar (L. 511). Handle. Fabric: 10YR/8/4. Inclusions and many voids. Small vertical "ear" handle. Small knob on handle.
Period: 9th-10th century.
Parallels: Oren 1971: 276.

Plate I:18. Jar (L. 200). Body sherd. Fabric: 5Y/8/2. Small voids. Raised spiral design made in a mold with a knob at the center and a small eight-petalled flower at the end of each spoke.
Period: 9th-10th century.

Plate I:19. Jar (L. 110). Disc-base. Diameter of base: 6.5 cm. Fabric: 5Y/8/2. Soft ware with many voids.
Period: 9th-10th century.
Parallels: Brosh 1986:Fig. 1:14.

Jugs

Plate I:20. Jug (L. 101). Rim to shoulder and handle. Diameter: 9 cm. Fabric: 2.5Y/8/2. Soft fabric. Small inclusions and some voids. Traces of red painted lines on the exterior.
Period: 9th-10th century.

Plate I:21. Flask (L. 714). Rim and neck. Diameter: 2.9 cm. Fabric: 10YR/7/3. Inclusions and voids. Prominent ridge on the exterior.
Period: possibly 13th century.

Plate I:22. Flask (L. 101). Rim, neck, shoulder and part of handle. Diameter: 2.4 cm. Fabric: 5Y/5/2. Disc-shaped ridge on exterior. Incised design on the shoulder.
Period: possibly 13th century.

Plate I:23. Jug (L. 200). Handle. Fabric: 10YR/8/3. Deep incised line along the center of the exterior of the handle. A high "flower" knob at the top of the handle.
Period: 9th-10th century.
Parallels: Brosh 1985:pl. Ib (incorrectly dated Umayyad).

Plate I:24. Jug (L. 204). Handle. Fabric: 2.5Y/8/2. Inclusions and voids. Molded design on the exterior.
Period: 9th-10th century.

Craters

Plate I:25. Crater (L. 511). Rim to shoulder. Diameter: 22 cm. Fabric: 2.5Y/8/2. Molded design on exterior of rim.
Period: 9th-10th century.

Bowls

Plate I:26. Bowl (L. 204). Rim. Diameter: 12 cm. Fabric: 2.5Y/8/2. Small inclusions and voids. Simple incised pattern on the exterior.
Period: 9th-10th century.
Parallels: Tiberias (unpublished).

Handmade Wares

Painted and unpainted handmade vessels are one of the more typical classes of wares found at sites in the Levant from the 12th or 13th century onward. They are more common at rural than at urban sites (Pringle 1985:176). The combination of functional forms and attractive if somewhat primitive decoration seems to have compensated for their coarseness and made them generally popular. These vessels are of thickly-potted, soft ware containing a large quantity of grit (calcite in the case of cooking ware) or with straw added as a temper. Occasionally the surfaces are burnished often over a pale slip and painted with red, black and brown paint in geometric designs.

Jars and Jugs

Plate II:1. Jug (L. 209). Nearly complete vessel broken off at rim. Diameter: 8 cm. Fabric:

6.5YR/6/6. Gritty ware. The form is a jug with a swollen neck and a single handle. The interior and exterior are covered with cream-colored slip and the exterior is decorated with a geometric design painted in dark brown paint.
Parallels: Crowfoot 1957:Fig. 84a:9; Bagatti 1984: Fig. 62:3.

Plate II:2. Jug/Jar (L. 517). Rim. Diameter: 10 cm. Fabric: 2.5YR/5/6. Gritty ware with many white (quartz) inclusions. Interior and exterior covered with a pink slip and a brown, geometric design painted in broad and fine lines.
Period: 12th-20th century.
Parallels: Tushingham 1985:Figs. 42:17, 45:12.

Plate II:3. Jar (L. 204). Rim, neck, shoulder and strap-handle. Estimated diameter: 9.2 cm. Fabric: 10R/6/6. Gritty ware with many quartz inclusions and some voids. Interior and exterior are covered with a pink slip painted on the exterior to the inside of the rim with a geometric pattern in brown paint.
Period: 12th-20th century.

Craters

Plate II:4. Crater (L. 204). Rim to shoulder. Diameter: 26 cm. Fabric: core 7.5R/3/0, surfaces 2.5YR/5/4. Gritty ware full of mica and straw impressions.
Period: 12th-20th century.
Parallels: Wightman 1989:Fig. 52:8.

Basins and Bowls

Plate II:5. Basin (L. 517). Rim. Diameter: 28 cm. Fabric: 2.5YR/5/6. Gritty ware with white inclusions and straw impressions. On the exterior, 2 cm below the rim, is a raised ridge and below it a hole was drilled on the interior and exterior, but not completed. Cream-colored slip on the interior and exterior. There is a red, geometric design painted on the exterior and rim.
Period: 12th-20th century.

Plate II:6. Basin (L. 204). Rim and wall. Diameter: 34 cm. Fabric: 5YR/5/6. Gritty ware. Many quartz inclusions. Pink slip on the exterior only, with a black design on the upper part.
Period: 12th-20th century.
Parallels: Pringle 1984:Fig. 4:21.

Plate II:7. Basin (L. 704). Rim and wall with fragment of a handle. Diameter: 27 cm. Fabric: 5YR/5/8. The ware is full of quartz inclusions. A pink slip covers the interior and exterior. On the exterior is a brown, geometric design.
Period: 12th-20th century.

Plate II:8. Bowl (L. 200). Rim and wall. Diameter: 24 cm. Fabric: core 2.5YR/6/2, surfaces 2.5YR/6/6. Gritty ware. Pink slip on the exterior and interior. Red and black painted design on the exterior and upper interior.
Period: 12th-20th century.

Plate II:9. Bowl (L. 107). Broad, flanged rim. Diameter: 23.5 cm. Fabric: core 2.5YR/5/0, surfaces 5YR/5/3. Many white inclusions and some voids (straw impressions). A pink slip covers the interior, rim and exterior. On the rim only is a brown painted geometric design.
Period: 12th-20th century.

Cooking Pots

Plate II:10. Cooking pot (L. 510). Rim. Diameter: 44 cm. Fabric: 5YR/7/2. Coarse gritty ware with large inclusions and voids.
Period: 12th-20th century.
Parallels: Bagatti 1947:Fig. 29:1.

Bowl

Plate II:11. Bowl (L. 200). Rim and wall. Diameter: 16.0 cm. Fabric: 5YR/7/3. Gritty ware with sand-size brown and white (quartz) inclusions. Cream-colored slip covers the interior and exterior, with black lines on the interior and a single broad black line on the exterior just below the rim.
Period: 12th-20th century.

GLAZED FINE WARES

Alkaline-Glazed Ware: Underglaze-Painted Frit Wares

Alkali-silicate glazed frit wares with underglaze-

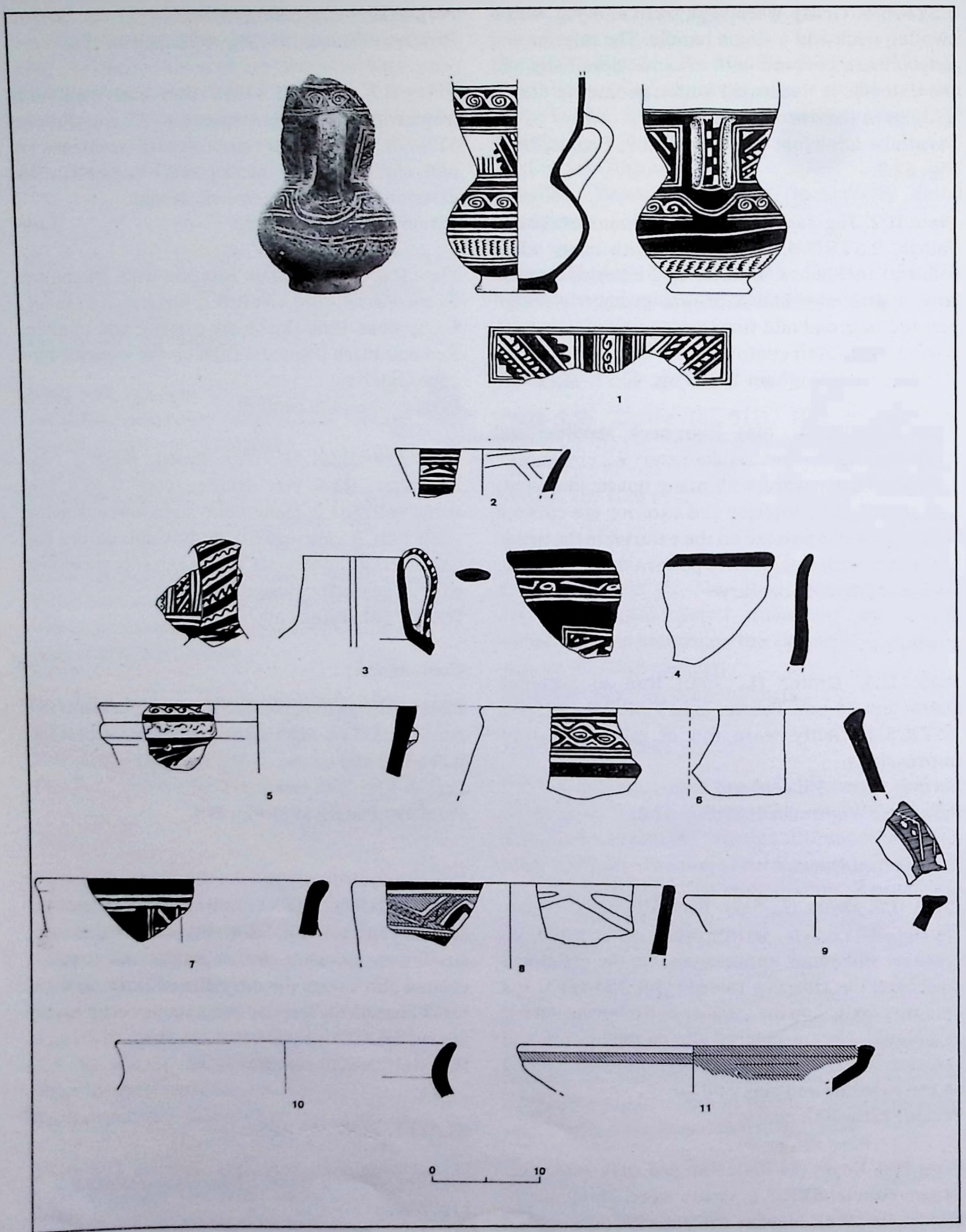


Plate II: Hand-Made Ware.

painted decoration were manufactured in Raqqa and Rusafa in northern Mesopotamia from the end of the 12th century and throughout Syria in the late 13th and 14th centuries. The frit paste used in the manufacture of these vessels is formed from a plastic clay to which a glassy flux or frit and silica (quartz sand or powdered flint) is added. During firing the clay and glass fuse and on cooling become hard and semivitreous. The glass flux is usually alkaline-based, as is the glaze (Caiger-Smith 1973).

Plate III:1. Chamber pot (topsoil). Nearly complete profile broken off at the rim. Estimated diameter: 18 cm. Fabric: 5Y/8/1. Frit. The interior and the exterior to just above the ring-base are covered with a pale blue alkaline glaze. On the rim are traces of a design in underglaze, painted in black with turquoise splashes. On the exterior is a check pattern painted in black underglaze. The vessel had a ledge rim and a single handle, both of which are broken.
Period: 14th century.
Parallels: Similar in form to chamber pots from Raqqa and Rusafa and to pots probably manufactured in Hama. This pot fits the description of Raqqa ware "vases avec peinture noire sous couverte bleu-vert" (Poulsen 1957:157), and Poulsen's Fig. 578 has an identical design.

Plate III:2. Bowl (L. 200). Complete profile. Hemispherical bowl with a ledge-rim and high ring-base. Diameter: 23 cm. Fabric: 5Y/8/2. Soft friable ware. The interior and exterior to just above the base are covered with a turquoise glaze with dark blue underpainting. The design includes a radiating pattern at the center, four parallel, crosshatched lines on the upper part, and a running triangular pattern on the rim. On the exterior are double, vertical lines. Probably of Syrian manufacture.
Period: 13th century.
Parallels: Tushingham 1985:Fig. 44:1.

A very poor type of alkaline-glazed ware is present amongst the finds at Hammat Gader, probably dating to the 9th or 10th century.

Plate III:3. Bowl (L. 511). Rim and wall. Hemispherical form. Diameter: 21.9 cm. Fabric: 5Y/7/1. Sandy ware. Grayish colored glaze with thick pale blue and black running design. The glaze is restricted to the interior.
Period: 9th-10th century.

Plate III:4. Bowl (L. 200). Rim and wall. Hemispherical form. Diameter: 26 cm. Fabric: 5Y/8/2. Soft ware with small voids. Pale gray-blue, deteriorated glaze on interior to just over the rim. Paring on lower exterior.
Period: 9th-10th century.

Plate III:5. Bowl (L. 511). Rim and wall. Hemispherical form. Diameter: 24.2 cm. Fabric: 2.5Y/8/2. Soft sandy fabric. Grayish-white glaze with light blue splashes is restricted to the interior.
Period: 9th-10th century.

Plate III:6. Bowl (L. 510). Ring-base. Diameter of base: 9 cm. Fabric: 5YR/7/3. Voids and some inclusions. Pale gray/white glaze on the interior.
Period: 9th-10th century.

Lead-Glazed Wares

Lead-glazed wares make up the vast majority of glazed vessels in medieval Levantine assemblages. Lead glaze is transparent and in order to be used to its full advantage it must be applied over a white or light-colored clay or slip. Metal oxides added to the glaze give it color: yellow if iron is added, green if copper is used. In the 12th and 13th centuries the ware of locally manufactured ceramics was dark, usually red-brown in color, and thus a white or cream-colored slip was always used under the glaze. This practice, known as slip-glazing, lent itself to decorative techniques that took advantage of the difference in the appearance of transparent, colored glaze over a light-colored slip and over the dark-colored ware. Two such decorative techniques were particularly effective, so effective indeed that they became the most popular means of decorating lead-glazed vessels in the 12th and 13th centuries. These techniques are known as Sgraffito and Slip-Painting.

Sgraffito (graffita) is a technique which is effected by covering the whole of the surface to be glazed with a light-colored slip. A pattern is then

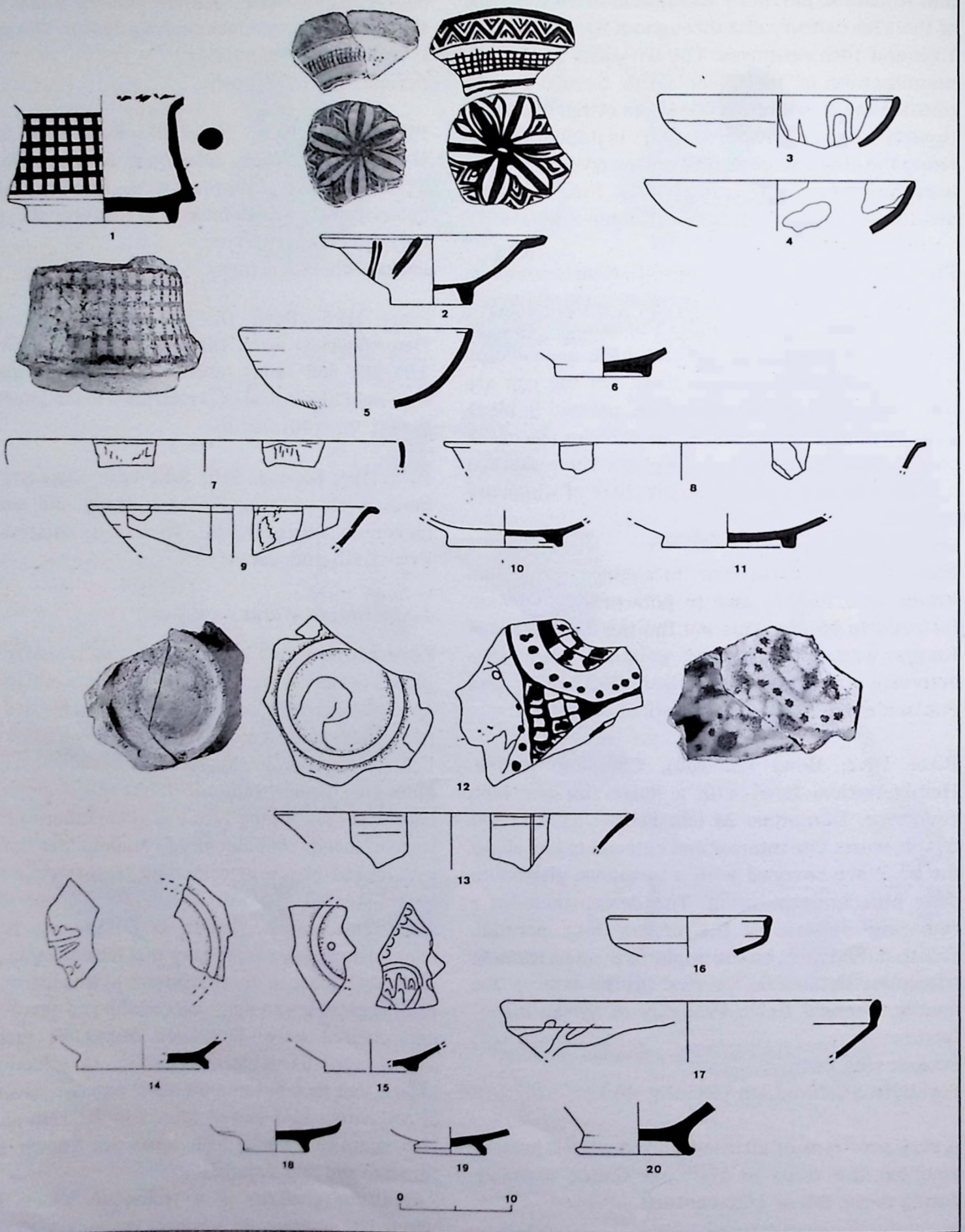


Plate III: Alkaline Glazed Frit Ware and Lead Glazed Bowls.

incised into the surface of the vessel through the slip, thus exposing the darker ware beneath it. Finally the transparent, colored glaze is applied. The incised design appears as dark lines against the colored background.

With slip-painting the design is painted with slip using a brush over the dark ware. The transparent, colored glaze is then applied over the whole surface.

Splash-Glaze Bowls

This class probably makes its appearance in local assemblages in the early ninth century. The ware is thinly potted, pink or buff colored and medium-hard. Typical forms are plates or bowls with ledge-rims or the more common "S"-shaped rim and low ring- or disc-bases. Within the overall splash-glazed treatment, monochrome, free-flowing, painted and sgraffito decorated types appear.

Free-flowing design

Plate III:7. Bowl (L. 511). Rim. Diameter: 33 cm. Fabric: 2.5YR/6/6. Fine inclusions. Cream-colored lead glaze stained with yellow, green and manganese over a white slip. The slip and glaze cover the interior and exterior of the sherd.
Period: 9th-10th century.

Plate III:8. Bowl (L. 711). "S"-shaped rim. Diameter: 38 cm. Fabric: 2.5Y/6/2. Transparent lead glaze on the interior and exterior with a yellow splash on the interior.
Period: 9th-10th century.

Plate III:9. Bowl (L. 101). Everted rim. Diameter: 22 cm. Fabric: 5YR/5/1. Fine inclusions. A thin, colorless glaze, splashed with green and yellow, covers a cream-colored slip on the interior and upper exterior. The slip continues over the whole of the exterior.
Period: 9th-10th century.

Plate III:10. Bowl (L. 201). Ring-base. Diameter of base: 10 cm. Fabric: 5YR/7/3. Voids and fine, white inclusions. Thin, white slip over the interior and exterior. On the interior is a largely deteriorated cream-colored lead glaze stained with pale green and ochre.
Period: 9th-10th century.

Plate III:11. Bowl (L. 511). Ring-base. Diameter of base: 13 cm. Fabric: 5YR/6/4.

Painted design

Plate III:12. Bowl (L. 511). Ring-base. Diameter of base: 10 cm. Fabric: 5YR/6/4. Voids and fine white inclusions. Colorless lead glaze over a cream-colored slip. On the interior a yellow painted design including a cross-hatched triangle and circles decorated with green stains and separated by rows of purple spots. On the exterior simple yellow and green staining.
Period: 9th-10th century.

Sgraffito decorated splash and painted

Plate III:13. Bowl (L. 511). Everted rim. Diameter: 20 cm. Fabric: 5YR/6/6. Fine inclusions. Pale yellow lead glaze stained with yellow, green and traces of manganese on the interior and exterior and decorated with fine sgraffito on the interior.
Period: 9th-10th century.
Parallels: Waagé 1948:Fig. 71; Tzaferis 1989:Fig. 25.

Plate III:14. Bowl (L. 511). Ring-base. Diameter of base: 14 cm. Fabric: 5YR/6/6. Fine white inclusions and some voids. Pale yellow lead glaze over a white slip on the exterior and interior. On the interior is a fine sgraffito design with manganese and green stains.
Period: 9th-10th century.

Plate III:15. Bowl (L. 101). Ring-base. Diameter of base: 5.6 cm., Fabric: 5YR/8/4. Fine inclusions. Deteriorated green lead glaze on the interior and exterior. Sgraffito design on the interior.
Period: 9th-10th century.
Parallels: Oren 1971:275.

Monochrome Slip-Glazed Bowls

This class appears earlier but it is particularly well established in late 13th- and 14th-century assemblages. It is probably of local manufacture and, as with other local wares of the medieval period, is of

a dark red or red-brown ware which necessitates the use of a light-colored slip prior to the application of transparent lead glaze. Also, as with other locally manufactured wares, the slip and glaze are usually restricted to the interior. Distribution is widespread throughout the region.

Plate III:16. Bowl (L. 700). Rim and wall (two pieces). Diameter: 16 cm. Fabric: core 7.5R/2.5/0, surfaces 5YR/6/6. There are inclusions and voids. There is a poor, largely deteriorated green lead glaze on the interior.
Period: late 13th-14th century.
Parallels: Pringle 1984:Fig. 7:42.

Plate III:17. Bowl (L. 200). Rim and wall. Diameter: 30 cm. Fabric: 2.5YR/6/6. Spotty, pale green lead glaze over a white slip on the interior and upper exterior.
Period: late 13th-14th century.

Plate III:18. Bowl (L. 200). Ring-base. Diameter of base: 6.5 cm. Fabric: core 7.5YR/5/2, surfaces 5YR/6/6. Spotty dark green lead glaze over a light gray slip on the interior. A hole is drilled through the foot, possibly for hanging. Such holes are occasionally found even on vessels of not a very high quality, as in this case.
Period: late 13th-14th century.

Plate III:19. Bowl (L. 700). Ring-base. Diameter of base: 6.1 cm. Fabric: 5YR/7/6. Soft ware with brick-colored inclusions and mica. Carinated form. The interior of the bowl is covered with a deteriorated pale yellow-green lead glaze over a thick white slip.
Period: late 13th-14th century.

Plate III:20. Bowl (L. 700). Ring-base. Diameter of base: 9.8 cm. Fabric: 5YR/6/8. Thickly-potted ware. Many sand-size inclusions. On the interior is a light green lead glaze covering a thick white slip which is thicker at the center of the bowl. Fairly high, everted base.
Period: late 13th-14th century.

Slip-Painted Bowls

There are a number of different variations within the class known as slip-painted wares. The examples from Hammat Gader are all of the local types.

Plate IV:1. Bowl (L. 200). Everted rim. Diameter: 26 cm. Fabric: 2.5YR/6/8. Small black and large white inclusions. Slip-painted design on interior including the rim. The lead-based glaze appears pale yellow over the slip, tan-colored over the ware. It is restricted to the interior and the rim.
Period: 12th-14th century.
Parallels: Tushingham 1985:Fig. 40:4.

Plate IV:2. Bowl (L. 200). Rim and wall. Diameter: 22 cm. Fabric: 2.5YR/5/6. Soft ware with many inclusions. Carinated form. A slip-painted design on the interior is covered with a lead glaze which appears pale green over the slip, dark brown over the ware.
Period: 12th-14th century.

Plate IV:3. Bowl (L. 517). Rim. Diameter: 24 cm. Fabric: 2.5YR/6/6. Some inclusions and voids. There is a yellow glaze on the interior to just over rim with slip-painted lines. Carinated form.
Period: 12th-14th century.
Parallels: Tushingham 1985:Fig. 35:30, 40:4.

Plate IV:4. Bowl (L. 204). Flanged rim. Diameter: 24 cm. Fabric: 2.5YR/6/6. Voids and small white inclusions. Slip painting on interior and traces of lead glaze on rim and exterior. Little glaze remains on the interior.
Period: 12th-14th century.

Plate IV:5. Bowl (L. 700). Inverted rim. Diameter: 28 cm. Fabric: 2.5YR/6/8. Green lead glaze with slip-painting on interior. Slip on the exterior extends 20 cm below the rim.
Period: 12th-14th century.

Plate IV:6. Bowl (L. 101). Ledge rim. Diameter: 32 cm. Fabric: 2.5YR/5/8. Small inclusions. Slip-painted design on the interior including the rim. The interior and rim are covered with a spotty glaze which appears light green over the slip, dark brown over the ware.
Period: 12th-14th century.

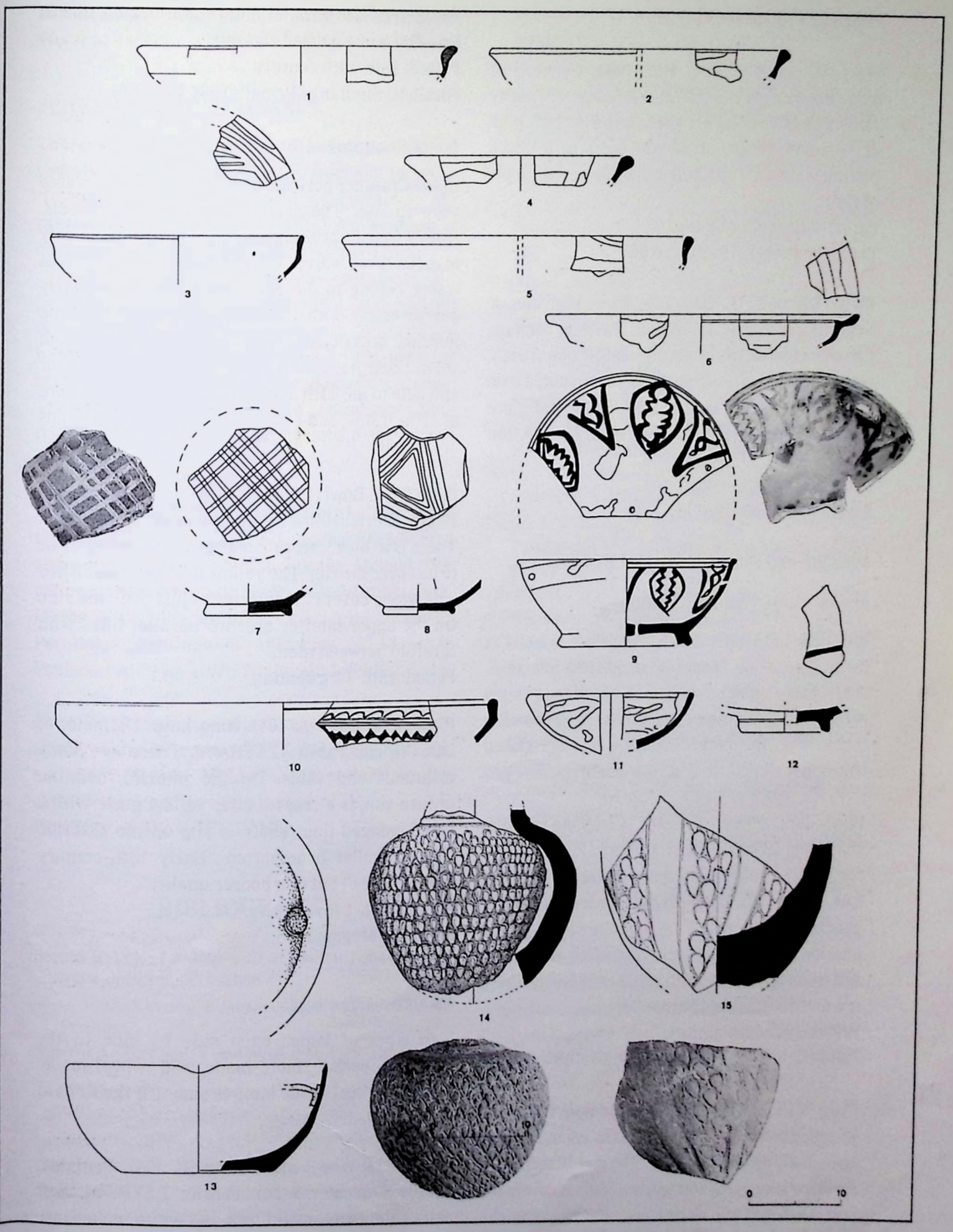


Plate IV: Lead Glazed Bowls.

Parallels: Pringle 1985:Fig. 5:26, 27, 28.

Plate IV:7. Bowl (L. 204). Ring-base. Diameter of base: 8.5 cm. Fabric: 2.5YR/5/6. There are many voids and inclusions. On the interior a thick pink slip-painted design of narrow lines in a check pattern is covered by a yellow lead glaze with spots of green glaze.
Period: 12th-14th century.
Parallels: Pringle 1985:Fig. 6:36.

Plate IV:8. Bowl (L. 200). Ring-base. Diameter of base: 7.8 cm. Fabric: 2.5YR/5/8. The ware contains fine mica inclusions in the fabric. Part of a design, three triangles, one within the other, is painted with slip on the interior and covered with lead glaze which appears cream-colored over the slip, tan over the ware.
Period: 12th-14th century.
Parallels: Pringle 1985:Fig. 6:34.

Sgraffito and Gouge-Decorated Bowls

Yellow and Green Gouged Ware

This class of sgraffito bowls and basins is found at many sites in the Levant (Pringle 1984:106; 1985: 186). The combined effect of sgraffito, gouged areas and a yellow glaze with green splashes makes this one of the more distinctive of local glazed wares in the late 13th and 14th centuries.

Plate IV:9. Bowl (topsoil). Complete profile. Diameter: 23 cm. Fabric: 10R/6/8. Fine grit and some voids. Simple, hemispherical form with a ring foot. The interior to just over the rim is covered with yellow lead glaze over a cream-colored slip. On the interior is a gouged design consisting of circular and triangular motifs with splashes of green. There is a mending hole at the base.
Period: 13th-14th century.
Parallels: Pringle 1984:Fig. 8:69, 70.

Plate IV:10. Bowl (L. 200). Rim and wall. Diameter: 46 cm. Fabric: 10R/6/8. The ware contains voids and small, white inclusions. The rim is carinated. A yellow lead glaze with green splashes covers the cream-colored slip to just over the rim. The slip continues down the upper part of the exterior. On the interior are parallel lines and a looped line in sgraffito and a gouged zig-zag.
Period: 13th-14th century.
Parallels: Similar to Pringle 1984:Fig. 8:71.

Local Sgraffito

In the Crusader period a number of sgraffito wares were in use. These included imported vessels, mainly from Cyprus and northern Syria, and locally manufactured wares. The examples from Hammat Gader belong to the local type. These are fairly coarse bowls with a monochrome glaze on the interior, occasionally with splashes of a second color. Some have a thin slip-wash on the interior and date to the 11th and 12th centuries. Others are of 12th-, 13th-, and 14th-century date. The designs are simple.

Plate IV:11. Bowl (L. 200). Rim and wall. Diameter: 18 cm. Fabric: 10R/6/8. The ware has many voids. There is a thick, cream-colored slip on the interior to just over the rim. The yellow lead glaze splashed with green covers the interior to just over the rim. On the upper interior are two parallel lines with sgraffito between them.
Period: 13th-14th century.

Plate IV:12. Bowl (L. 101). Ring-base. Diameter of base: 10 cm. Fabric: 2.5YR/6/6. There are many inclusions and voids. On the interior, over an uneven slip, is a crazed, dirty yellow glaze with a broad, gouged line. There is slip on the exterior. This is similar to imported "Early 13th-century Aegean Ware" but of a poorer quality.
Period: 13th-14th century.
Parallels: Megaw 1975.

LAMPS

Two types of lamps exist side by side in the medieval period: mold-made and wheel-made. Only one wheel-made lamp is amongst the finds at Hammat Gader.

Plate IV:13. Wheel-made lamp (L. 306). Complete profile. Diameter 9 cm. Fabric: 7.5YR/7/4. Soft ware with many small black and white inclusions.
Period: 9th-10th century.

Parallels: Somewhat similar to Ben-Tor et al. 1979: Fig. 6:11.

SPHERO-CONICAL VESSELS

There is still much debate as to the function of these vessels. Two principal theories were put forward: (i) these were vessels used as containers for precious liquids; (ii) they were used as missiles containing inflammable liquids (Greek Fire).

Two distinct types are known – one made of a greenish clay and with stamped and molded decoration, the other of red-brown to gray clay, hard-fired and with either a red-brown, green or blue lead glaze over stamped or molded decoration. The examples here are of the second type. Both types are very thickly potted with a very small opening.

Plate IV:14. Sphero-conical vessel (L. 200). Body sherd. Fabric: core 10YR/5/1, ware 7.5R/4/0. Fine and some large voids and inclusions. Molded cone pattern on exterior with traces of red-brown glaze. Period: 13th-14th century.
Parallels: Tushingham 1985:Figs. 43:18, 45:9; Poulsen 1957:Fig. 1050; Wightman 1989:Fig. 63:11.

Plate IV:15. Sphero-conical vessel (L. 200). Body sherd. Fabric: cores 7.5YR/6/2 and 5YR/7/6, surface 7.5R/4/0. Molded cone pattern on the exterior with red-brown glaze.
Parallels: as above (Pl. IV:14).

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CHAPTER 10

ROMAN, BYZANTINE AND UMAYYAD GLASS

Einat Cohen

INTRODUCTION

Glass was found in very large quantities at Hammat Gader. Most of the material consists of small fragments or parts of vessels, and only a small part is made up of complete vessels. The chronological range stretches from the Late Roman period (third-fourth century) to the Muslim period (seventh-eighth century). The assortment of items, their shapes and types, is rich and varied and includes open and closed vessels, as well as glass used for other purposes, such as windowpanes and glass mosaics. The ornamentation is also varied: blue blobs, rows of horizontal threads, coarse wavy patterns, and colorful chain patterns. The quality of the vessels ranges from very thin colorless to dark green with thick walls. Most of them are free-blown and the others are mold-blown.

No glassworks was revealed in the baths complex of Hammat Gader. Such a factory most probably existed at a neighboring site – either Hammat Tiberias or the city of Gadara – and supplied vessels to the baths.

Glass vessels and fragments thereof were found in all the excavation areas. Each of the main pools, walkways, bathtubs in the alcoves, and channels contained many fragments. We may assume that these fragments constituted part of the fill material that was brought from nearby to seal the pools prior to the laying of a late pavement, or that the pools were filled as the result of an earthquake, at which time vessels fell into them. An assemblage of intact vessels was discovered in a channel (L. 505) connecting the Oval Hall (Area A) with the main pool of Area E. Here closed containers, mainly bottles, were found trapped in protective muddy sediments.

From a quantitative examination, it appears that most of the glass vessels found in the excavation are closed vessels, such as bottles, juglets, amphoriskoi, tubes, and jars. Also noteworthy is the relatively large number of glass lamps and drinking vessels – cups and goblets. In contrast to these vessels, the exact quantity of which cannot be verified but can be estimated at many hundreds, the number of plates and bowls is small – a few dozen fragments belonging to the open vessel group. This fact is indeed indicative of the use in the baths of various perfumes, oils, and creams that were stored in closed vessels.

The treatment of each category of vessels presented in this report starts with a general introduction dealing with their division into types and subtypes. A brief discussion of the type and its variants is then followed by an analysis of the quantity of vessels and/or fragments of the type or subtype, where they were found, a detailed description, and the features of the type, color, decoration, distribution, parallels, dating, and classification.

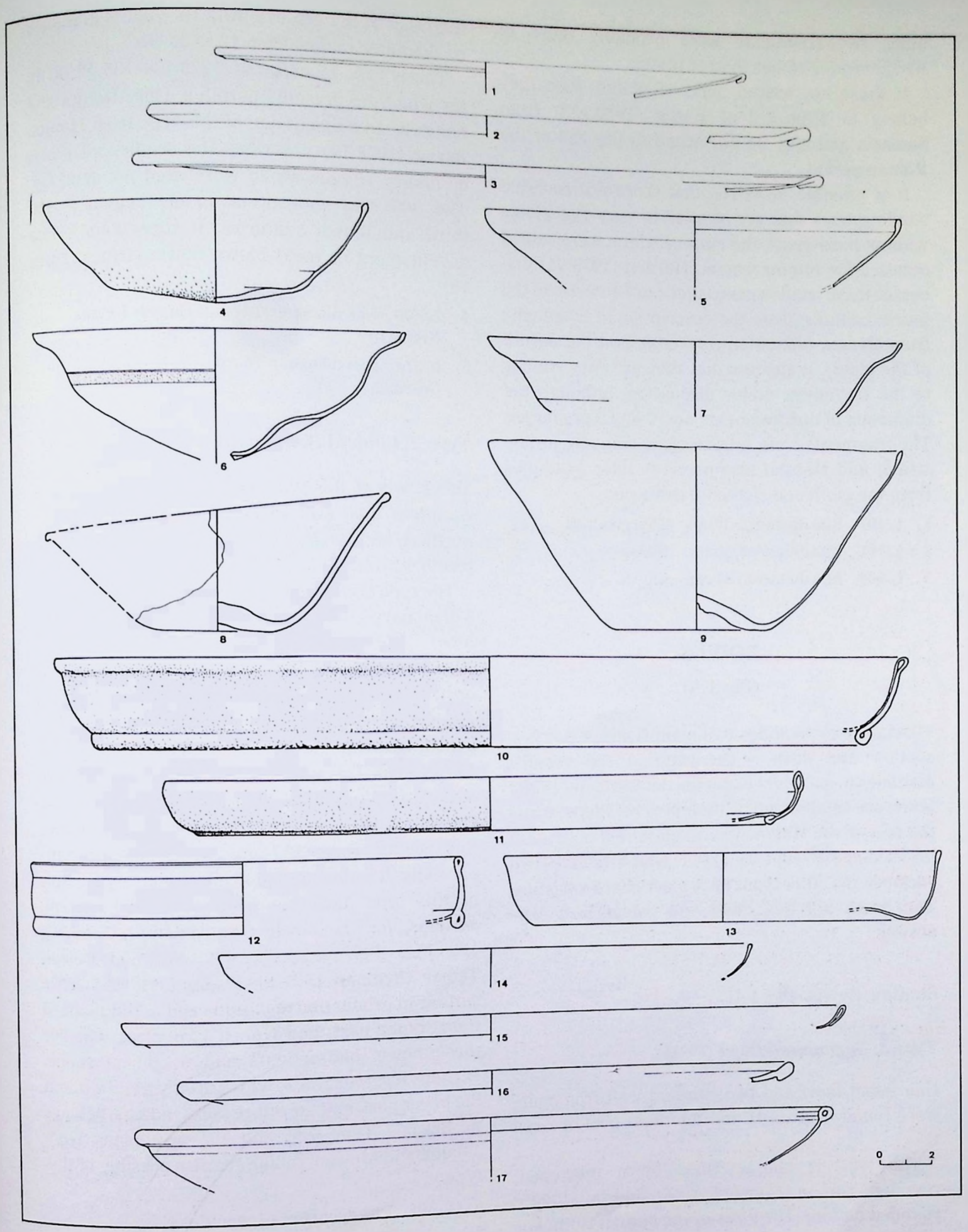
PLATES

This category includes a number of fragments that may have belonged to plates, but could possibly have been parts of windowpanes; owing to their small size and the absence of bases, it is difficult to identify them with certainty.

Type 1 (Pl. I)

Three fragments were found in Loci 101 and 104. The fragments are of an outward-folded rim and the beginning of an almost horizontal wall. The glass of these vessels is bluish and greenish.

No. 1 could be classified as a very shallow plate on the basis of the angle of its wall; however, the



Pl. I. Plates and bowls.

other two fragments were probably those of windowpanes rather than of plates.

If these are indeed parts of plates, then they belong to Type 1.2 of Barag (1970:133) from Samaria and may be attributed to the end of the Roman period.

It is possible, however, that these are rounded windowpanes that are similar to very flat plates without base-rings, the rims of which were folded outward for reinforcement. Harden (1936:91) discusses these windowpanes that came into use in the fourth century; from the description of fragments from Gerasa (diameter, thickness, and the nature of the glass), it appears that they are very similar to the fragments under discussion, although the diameters of our fragments nos. 2 and 3 are larger. The fragments from Gerasa come from Byzantine strata, and Harden also presents later examples from the ninth and sixteenth centuries.

1 L. 101 Rim diameter: 20 cm Thin greenish
2 L. 101 Rim diameter: 30 cm Bluish
3 L. 104 Rim diameter: 31 cm Bluish

BOWLS

(Pls. 1-4)

This category includes two main types of bowls – shallow and deep – the ratio of the vessel's diameter to its height being the determinant. Intact bowls are categorized by their general shape, while the rest of the fragments are classified according to rim shape. Except for Type 6, which includes two variants, the other types have clear characteristics. The bases are described and categorized separately.

Shallow Bowls (Pls. I-II)

Type 1: Segmented Bowl (Pl. I)

One intact bowl and two rim and wall fragments were found in Area H and the main pool of Area C.

The type is characterized by a thickened, rounded rim, a rounded wall, and a slightly rounded bottom. The glass of the bottom is thicker than that of the vessel's wall. Its color is greenish; its diameter ranges from 12 to 20 cm.

This is Type 2.3 of Barag (1970:134-135, Pl. 30.3), for which he presents parallels from Hanita and Samaria. In a discussion of this type from Hanita, Barag (1978:19) describes the segmented bowls as luxury vessels which were used for drinking. The type was widespread in our region in the third and fourth centuries; it represents a late development of mold-blown bowls (Isings' Form 18).

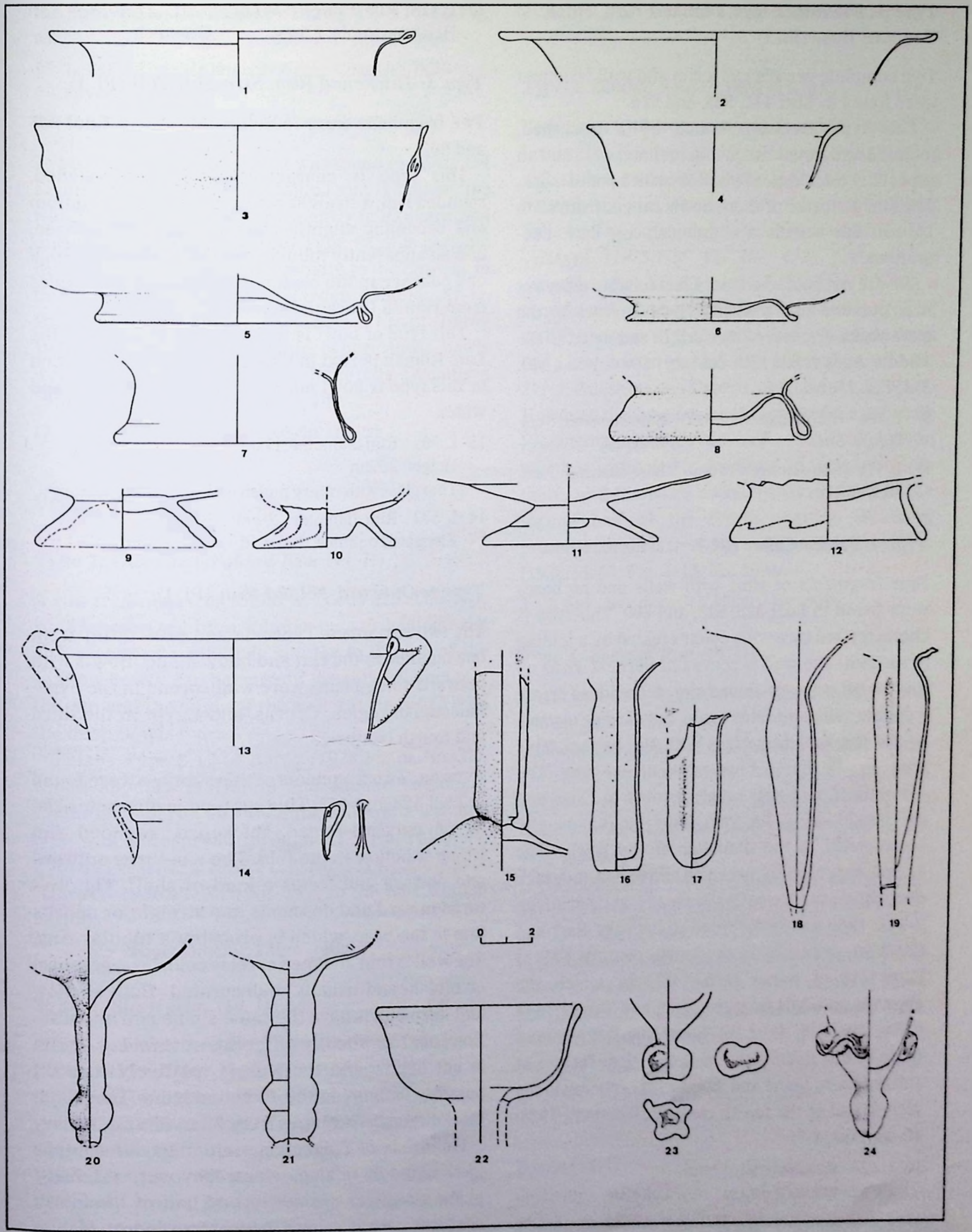
4 L. 800 Rim diameter: 12 cm Height: 3.8 cm
Greenish
5 L. 313 Rim diameter: 16 cm
Greenish

Type 2: Conical Bowls with Wall Indents (Pl. I)

Two bowls of this type were found: one is almost complete and was revealed in Locus 305, the northern bathtub in W6; the other is a rim and wall fragment from Locus 211.

The type is characterized by a vertically cut rim, a diagonal wall with indents in the lower part of the bowl, and most probably a concave base. Sometimes one or more thin or thick external horizontal grooves appear on these bowls. Our bowl features a relatively thick, rough groove ca. 1.5 cm beneath the rim, the diameter of which ranges from 14 to 16 cm. This type was widespread in the West (the western provinces of the Roman empire) in the fourth century. Isings (1957:147-148) determines this as her Form 117, for which she presents parallels. It is uncommon in our region and vessels of this type have not been published, except, perhaps, for the bowls from Jalame (Weinberg 1988:Fig. 4-49, No. 5.477, 479, 439) and Metzad Tamar (Erdman 1977:Pl. 5.432, 439), which are similar in production technique and in the shape of their upper part; however, it is unclear whether these bowls had indents and a conical shape. Perhaps fragment no. 4, which is only a rim without the lower part, and therefore lacks indents, belongs to Barag's Type 2.5, and the specimens from Jalame and Metzad Tamar are also possibly of this type.

6 L. 305 Rim diameter: 14 cm Colorless
7 L. 211 Rim diameter: 16 cm Bluish



Pl. II. Bowls and lamps.

Type 3: Thickened Rim, Inclined Wall, Thick Concave Base (Pl. I)

Two complete vessels and a rim and wall fragment were found in Loci 441, 506, and 516.

This type is characterized by a thickened, inclined or everted rim, a thin inclined wall, and an especially thick concave bottom with a pontil mark. The rim diameter of these bowls ranges from 12 to 16 cm; the vessels are greenish and lack decorations.

We did not find exact parallels for this type, but it is possible that a similar type appears in the glassworks discovered on Corinth and dated to the Middle Ages (11th-12th century) (Davidson 1940: 314, Fig. 15, No. 29).

8 L. 506 Rim diameter: 12.5 cm Base diameter: 5 cm
Height: 5 cm Greenish

9 L. 441 Rim diameter: 16 cm Base diameter: 7 cm
Height: 7 cm Greenish

Type 4: Folded Collar (Pl. I)

Four fragments of rims with walls and no bases were found in Loci 325, 623, and 800. This type is characterized by a wide collar created by a folding of the rim. The wall is convex or vertical, rises up toward the outward-folded rim, descends to create a double wall, and folds again, outward or inward, where the wall converges with the bottom. This type usually has a high tubular base-ring. The diameter of the bowls ranges from 16 to 32 cm and its height is 2-3.4 cm. The height usually corresponds to the diameter of the bowls. The vessels are colorless, greenish and bluish, they lack decoration, and the patina is usually white or silver.

This type was widespread in both the East and the West, primarily in the fourth century. This is Form 118 of Isings (1957:148), for which she presents parallels from the West, and Type 2.16 of Barag (1970:Pl. 31, 2.16). Some 100 fragments of these bowls, manufactured in the glass factory at Jalame, were found and dated with certainty to the second half of the fourth century (Weinberg 1988: 47-48, Figs. 4-7).

10 L. 623 Rim diameter: 32 cm
Height up to fold: 3.4 cm Colorless

11 L. 800 Rim diameter: 23.5 cm
Height up to fold: 2 cm Bluish

12 L. 325 Rim diameter: 16 cm
Height up to fold: 2.6 cm Greenish

Type 5: Thickened Rim, Straight Wall (Pl. I)

Two fragments were found in Phase I of Loci 305 and 502.

This type is characterized by a thickened, rounded rim, a straight wall rounding at the bottom and becoming slightly concave toward the base, and an apparently tubular base-ring which is thick and concave in the center, like the many examples from Hanita (Barag 1978:17, Fig. 7, Nos. 10-22).

This type of bowl is widespread in tombs of the Late Roman period in Western Galilee. A variation of this type is bowl no. 11, which is shallower and wider.

13 L. 305 Rim diameter: 17 cm
Height: 2.7 cm Colorless
Thin glass with rotary polish on the wall's exterior

14 L. 502 Rim diameter: 20 cm Bluish
Elongated bubbles, thin wall

Type 6: Outward-Folded Rim (Pl. I)

The two variants — Types 6a and 6b — differ from one another in the rim and body shape. Bowls with outward-folded rims were widespread in the Syro-Palestinian region, Cyprus, and Egypt in the third and fourth centuries.

Type 6a: Two fragments of this subtype were found in Loci 428 and 437. This subtype is characterized by an outward-folded, thickened, rounded rim which is hollow in the fold. The rim turns outward and upward and forms a kind of shelf. The wall turns inward and descends in a straight or convex line to the base, which is probably a tubular ring. The wall is thin and the vessel is colorless, greenish or bluish, and usually undecorated. Both shallow and deep bowls have the same shape rim and wall. Bowl no. 13 is slightly different — the fold of its rim is not hollow and the wall is relatively thick; it possibly belongs to the Plate category. The diameter of the bowls ranges from 23 to 27 cm.

Hundreds of fragments similar to our subtype were found at Jalame, where they were produced in the glassworks in the second half of the fourth century; parallels have been recorded at Hanita (Weinberg 1988:41-43, Fig. 4-3, Nos. 20, 21), and

the subtype is discussed by Barag (1978:10-13, Fig. 6).

15 L. 437 Rim diameter: 27.6 cm Colorless; thick silver patina

16 L. 428 Rim diameter: 23.2 cm Bluish

Type 6b: One rim fragment was found in Phase I of Locus 313. The outward-folded rim is hollow; the wall is inclined but differs slightly in its shape and direction near the rim from Type 6a. It is possible that the wall descends diagonally to the base, as in the bowl from Karanis (Harden 1936:Pl. XI-1). Parallels to this subtype come from Egypt (Barag 1970:133) as well as Jalame, where these bowls were manufactured by the hundreds (Weinberg 1988:41-43, Fig. 4-3, Nos. 13, 14).

17 L. 313 Rim diameter: 26.6 cm Bluish

Deep Bowls

Type 1: Outward-Folded Rim (Pl. II)

A rim fragment was found in Locus 428. This type is characterized by a tubular outward-folded rim and a convex wall. It is similar to Type 6 of the shallow bowls, but because of the small diameter of the rim and the angle of the wall it is classified with the deep bowls.

This is Type 3.12 of Barag (1978:Fig. 9, No. 31), which appears at Hanita and Jalame (Weinberg 1988:Fig. 4-3, No. 23). Like the shallow bowls, this type was widespread throughout Syria, Palestine, Cyprus (Vessberg 1952:Pl. 2, No. 1314), and Egypt (Harden 1936:Pl. XIV, No. 247) in the Late Roman period.

1 L. 428 Rim diameter: 13 cm Bluish

Type 2: Shelf Rim (Pl. II)

A rim and wall fragment was found in Phase I of Locus 313. This type is characterized by a thickened and rounded shelf rim, and a carinated vertical or convex wall. These bowls usually have a high solid or tubular base-ring.

Similar Late Roman bowls were found in Palestine, primarily in Western Galilee, and in Cyprus. An example of this type comes from the grave at Hanita (Barag 1978:Fig. 11, 39).

2 L. 313 Rim diameter: 17 cm Light and thin, greenish

Type 3: Double Fold in Wall (Pl. II)

A rim and wall fragment was found in Phase I of Locus 516. This type is characterized by its sloping wall with a double fold in its upper part, ca. 1 cm beneath the rim, creating two horizontal tubular hollows. The rim is slightly thickened and rounded.

Hayes (1975:Fig. 13, No. 472) presents an example of an intact bowl of this type having a straight wall and tubular base-ring. Mainly rim and wall fragments with a double fold, primarily from the Late Roman period, were found in eastern Syria, Palestine, and Cyprus, as well as in the West. However, the time frame of these vessels is broad. Fragments of this type were found at Jalame together with vessels produced in the glassworks there, and therefore probably also belong to the second half of the fourth century. Weinberg presents parallels from Metzad Tamar and the West (1988:53-54, Fig. 4-15, No. 109).

3 L. 516 Rim diameter: 14 cm Greenish

Type 4: Everted Rim (Pl. II)

A rim and wall fragment was found in Phase I of Locus 516. This type is characterized by a thickened and rounded everted rim, present in both deep and shallow bowls, and a convex wall. Because of its relatively small diameter, the fragment from Hammat Gader is assigned to the deep bowls.

This type was widespread mainly in the East, Syria, Palestine, and Cyprus in the third and fourth centuries C.E. In the West, Isings' Form 87, which is probably not an exact parallel of our type, is dated to the second century. A few dozen of these rim fragments of deep and shallow bowls were found at Jalame (Weinberg 1988:40, Fig. 4-1 and parallels there).

4 L. 516 Rim diameter: 10 cm Bluish

Bases (Pl. II)

The bases of the bowls found at Hammat Gader may be divided into two main types – tubular

base-rings and solid base-rings. The tubular bases appear in two variants – low and high. It appears that both base types belong to plates as well as deep and shallow bowls, as may be seen in the grave from Hanita (Barag 1978:Figs. 7, 8, 10) and in Barag's type charts (1970:Pls. 30, 31).

The majority of parallels are dated to the Late Roman period. In Egypt the solid bases are more widespread than the second type, while in our region the tubular bases are more common.

Type 1: Tubular Base-rings (Pl. II)

Type 1a: Low Tubular Base-ring. Five fragments of this base with the beginning of the wall were found in Loci 313 and 506. This subtype is characterized by a hollow base-ring with a thickened bottom and concave center bearing a pontil mark, and a thin wall (fragment no. 6 is not hollow, but similar in shape). The diameter of the bases ranges from 6.5 to 9.5 cm.

5 L. 616 Base diameter: 9.5 cm Greenish

6 L. 506 Base diameter: 6.8 cm Bluish

Type 1b: High Tubular Base-ring. Six fragments were found in Loci 437, 612, and 803. This subtype is characterized by the same hollow base-ring, high on the sides and low in the center. The diameter of the bases ranges from 7 to 8.5 cm. Their height is 1.8-2.5 cm. The vessels are bluish, greenish, and colorless.

7 L. 621 Base diameter: 8.5 cm Colorless

8 L. 803 Base diameter: 8 cm Bluish

Type 2: Solid Base-ring (Pl. II:9, 10)

Eight fragments of this type were found in Loci 106, 211, 313, and 506. This type is characterized by a sloping or slightly concave straight solid base-ring with a pontil mark. The diameter of the bases ranges from 6 to 8.5 cm. A diagonal groove sometimes appears on the surface of the base, as noted in Karanis (Harden 1936:Pls. XI, XII, XIV). All the bases at Hammat Gader are green to dark green.

This base type made its appearance in the second century and is known to occur in the Middle East, Anatolia, and Egypt. In Palestine, it is found primarily in Western Galilee. Two examples from the time of the glassworks at Jalame were revealed; however, they were not manufactured on the site (Weinberg 1988:58, Fig. 4-20 and parallels there).

9 L. 506 Base diameter: 6 cm Height: 1.4 cm Dark green

10 L. 313 Base diameter: 6.8 cm Height: 0.9 cm Dark green

11 L. 313 Base diameter: 5.3 cm Height: 1.3 cm Green

12 L. 211 Base diameter: 8 cm Height: 1.8 cm Dark green

LAMPS

(Pl. II)

Three main vessel types are included in this category:

1. Bowl-shaped lamps with three handles;
2. Bowl-shaped lamps with a stem;
3. Bowl-shaped lamps with a button-base.

The bowl-shaped lamps with three handles are widespread at Hammat Gader; fragments of bases, rims, bodies, and many handles were found in most of the excavation areas. As at many other sites, they appear in two variations – with a straight wall and with a concave wall – and were meant to be suspended by the three handles. These lamps were found in the East and the West as well. In the East, they are characteristic of the assemblages from the fifth to the early seventh century. In the West, lamps of this type made their appearance at the end of the fourth and the beginning of the fifth century and continued in use until the Middle Ages.

The bowl-shaped lamps with a stem are a Syro-Palestinian development and are known to occur throughout the empire since the Late Roman period; they appear mainly in the East in the Byzantine period (fifth-sixth century) and continue until the Middle Ages. At Hammat Gader, ca. 50 fragments of various lamp stems were found, as well as the bowl of a lamp preserved down to the beginning of the stem. The most widespread type has a hollow stem; however, we also find lamps with solid or coil-shaped stems. Rim and body fragments which could be associated with lamps with stems or bowl-shaped lamps were not included in this catalogue; their fragmentary condition did not

permit conclusive identification. The stems of these lamps were set in metal hoops which were suspended from three chains – similar to those that were found at Beth Shean (Isings 1957:162), Mt. Nebo (Saller 1941:Pl. 137, 1, 6), and Sardis (von Saldern 1980:50).

The bowl-shaped lamps with a button-base are generally less widespread, and such is also the case at Hammat Gader. Harden and Crowfoot (1931:Pl. XXVIII, 11-12; XXIX, 37) present similar examples which they define as developments from the Middle Ages, noting that depictions of these lamps appear in wall paintings and mosaics from the late fourth to early fifth century. These lamps were apparently suspended from a candelabrum; this type of lamp is used in the East to the present day.

Type 1: Bowl-shaped Lamps with Three Handles (Pl. II:13-15)

Three variants of this type of lamp were found: one is a bowl with a sloping wall, which is the most widespread type in the East and West; the second has a concave wall near the rim and a convex or diagonal wall toward the base; the third variant, of which only a fragment has survived, is a bowl with a hollow wick-tube in the center of its interior. Type 1 is characterized by an outward-folded lip, three small handles from the rim to the wall, a sloped or concave wall, and a flat or concave bottom.

Many bases and small handles which most probably belong to this type were found in most of the excavation areas; however, the examples dealt with here are of rim and body fragments with handles characterizing the three variants.

Type 1a: A fragment of a rim, body, and handle was found in Locus 803 of Area H. The rim is thickened and folded outward; the wall slopes, and the loop handle from the wall to the rim above it has a triple incision. The color of the glass is light greenish and the wall is very thin.

Lamps of this subtype began to appear in the West at the end of the fourth-beginning of the fifth century; Isings (1957:162) presents a number of examples from Italy. In the East, this subtype made its appearance slightly later and is characteristic of Byzantine assemblages. Barag (1970:184) offers examples from Beth She'arim, Gerasa, and Beth Shean, and dates them to the end of the Byzantine period. At Sardis (von Saldern 1980:46-49, Pl. 23, 237, Pl. 11, 240), such lamps were found in the synagogue and in shops, and probably belong to their later phase, primarily the sixth and early seventh centuries.

13 L. 803 Rim diameter: 12 cm Light greenish

Type 1b: A fragment of a rim, body, and handle was found in Locus 201 of Area B. The rim is thickened and folded outward, and the loop handles extend from the edge of the upper rim and slope downward to the wall. The upper part of the wall is concave and widens toward the middle of the vessel. The glass is very thin and light greenish in color.

Similar lamps were found at Sardis (von Saldern 1980:Pl. 23, 246) in Byzantine assemblages from the fifth, and primarily sixth and early seventh centuries.

14 L. 201 Rim diameter: 14 cm Light greenish

Type 1c: One fragment of the wick-tube in the center and a broken bottom was found in Locus 900. Type 1c of the Tube family may also belong to this subtype; however, it is difficult to determine this with certainty.

This subtype is characterized by a concave bottom and three handles extending from the middle of the lamp's bowl. The bottom is thickened in the center, to which is attached a vertical hollow cylinder which most probably held the wick. The glass is thick and covered with a white-yellow patina. This is probably Type 13.12-16 of Barag (1970:184), for which he presents parallels from assemblages in the synagogues at Ma'on and Beth Shean, and from Mt. Nebo dating to the end of the Byzantine period. A fragment from Beth Aniah may be dated no later than the mid-fifth century.

15 L. 900 Thick greenish; white-yellow patina

Type 2: Bowl-shaped Lamps with a Stem (Pl. II:16-22)

This type appears at Hammat Gader with four variants of the stem form – two with a hollow stem and two with a solid stem. A bowl belonging to one of these variants was also found. This type is characteristic of Byzantine assemblages in Palestine, Transjordan, and Syria.

Type 2a: Steep Cylindrical Stem. Fourteen fragments were found in the main pools and side bathtubs in Areas A, B, and C, in Locus 455 beneath the floor in Areas A and D, and in the loci above it.

The cylindrical stem is sometimes rounded and sometimes flattened on the bottom, and has a pontil mark. The stems are both short and long; their height ranges from 4 to 7 cm. The glass is light greenish, bluish, and colorless, and sometimes vertical depressions appear along the stem (as in fragment no. 17).

Similar vessels, all dating from the Byzantine period, were found in the synagogue at Beth Shean (Zori 1967:Fig. 11.5), at Bethany (Saller 1957:330), and at Sardis (von Saldern 1980:Pl. 23, 200).

16 L. 106 Stem height: 7 cm Greenish

17 L. 437 Stem height: 5.5 cm Bluish; white-yellow patina

Type 2b: Sloping Hollow Stem. Eighteen fragments were found in the same areas where fragments of Type 2a were revealed.

This subtype is characterized by a stem sloping toward the pointed base and flaring gradually upward. Sometimes a pinchmark appears at the junction with the bowl (as in lamps nos. 18 and 19). The glass, which ranges in color from greenish to dark green, thickens at the bottom and sometimes features vertical depressions (as in lamp no. 8).

Parallels to the sloping subtype are to be found in Byzantine assemblages at Shavei Zion (Barag 1967:Fig. 16.25), Gerasa (Barag 1970:123-126), and Sardis (von Saldern 1980:Fig. 274), and to the pinched stem subtype at Gerasa (Barag 1970:Pl. 28.5).

18 L. 327 Stem height: 8.5 cm Dark green

19 L. 305 Stem height: 8.5 cm Dark green; vertical depressions

Type 2c: Solid Stem. Three fragments of lamps with a solid stem were found in Loci 203 and 703. This subtype is characterized by a long, thin, solid stem terminating in a slightly inverted slope at the bottom or in a coil or two. The walls of the bowl in continuation of the stem are convex, diagonal, and very thin. Their colors are greenish and bluish; the length of the stem is ca. 6 cm.

This is Type 13.4, 5 of Barag (1970:182 and parallels there). Similar vessels were found in the synagogue at Beth Shean (Zori 1967:Fig. 11, 1, 3) and at Shavei Zion (Barag 1967:Fig. 16:24).

20 L. 703 Stem length: 5.8 cm Bluish

Type 2d: Coil-shaped Solid Stem. Thirteen fragments were found in most of the excavation areas. Characteristic of the subtype is a coil-shaped solid stem, a pontil mark at its bottom, a rounded thin wall, and a rounded rim. The colors are greenish and bluish.

Some 200 fragments of this subtype were found at Gerasa (Baur 1938:Fig. 17, nos. 368, 369); this is Type 13.3 of Barag (1970:182 and parallels there), which is typical primarily of the Decapolis region, the Syro-African fault, and the Sinai region in the fifth-seventh centuries. In the excavations at Gerasa in 1982-1983, C. Meyers (1989:237) dated these lamps with certainty to the Umayyad period. No such lamps were found at Sardis, in contrast to the very popular lamps with a hollow stem.

21 L. 313 Stem length: 7 cm Green

A lamp bowl (no. 22) was found in Locus 727; it has a convex wall and slightly everted rounded rim. This is Type 13.3 or 13.6 of Barag (1970:182-183 and parallels there).

22 L. 727 Rim diameter: 8 cm Bowl depth: 3 cm Bluish

Type 3: Bowl-shaped Lamps with a Button-Base (Pl. II:23, 24)

Five fragments were found at Hammat Gader in loci containing fourth-century material (e.g., L. 506) and in late loci such as L. 202, which is an Abbasid bath.

This type is characterized by a rounded or conical bowl bottom, a vertical wall, and a button- or cube-shaped base. Lamp no. 24 is decorated on its bottom with a thick wavy thread of the same color as the vessel. On the basis of their dark color, these vessels are considered to be later than the Byzantine period.

There are few parallels for this type, and its dating is also uncertain. In Sardis such lamps were found in early Byzantine assemblages (von Saldern 1980:52-53).

23 L. 202 Dark green

24 L. 506 Dark green

GOBLETS

(Pl. III)

All the vessels having a disc-base and stem were classified in this category. No intact specimens were found during the excavation. Body and rim fragments that may have belonged to the Goblet family but could also be attributed to other vessels, such as lamps, cups, large bottles or deep bowls, have not been included. The goblets were found in most of the excavation areas, in both early and late loci.

More than 100 complete and partial bases were found. Most of them have a continuation of the stem and a few have a continuation of the body. The colors are primarily light greenish and bluish, but there are also yellow and dark green goblets. Thin and delicate vessels appear together with thick and cruder ones. The bases are usually made sloppily, and their diameter ranges from 4 to 6 cm.

Except for a single goblet decorated with a horizontal thread wound around the end of the stem, no remains of any kind of decoration were found on the dozens of specimens from Hammat Gader.

Goblets were used primarily for drinking. Harden (1936:167) reached this conclusion when working on the Karanis goblets, as did von Saldern (1980:53), who found a great variety of goblets at Sardis.[1] An identical goblet with three handles extending from the rim to the body was found at Gerasa and was probably used as a suspended lamp (Baur 1938:517, no. 17). Suspended U-shaped lamps with a stem appear in many artistic depictions, e.g., in the mosaic floor of the synagogues at Beth Alpha and Na'aran, in the church at Gerasa, and on clay lamps and a plate at Beth She'arim (Barag 1971:211, Fig. 100; Goodenough 1953:3, nos. 304-305, 639, 646).

No complete goblets with handles were found at Hammat Gader; however, it is quite possible that such goblets did exist and that their absence from the finds is due to their fragility.

Barag (1970:146) terms these "wine goblets" and presents many examples from assemblages in our region, on the basis of which he dates our goblets to the end of the Byzantine period. According to his data, it is impossible to determine when these goblets began to appear. However, parallels from other sites, such as Jalame (Weinberg 1988:64, Nos. 201-202), Sardis (von Saldern 1980:2, 53),[2] and the synagogue at Beth Shean (Zori 1967:161-162), seem to indicate that this occurred some time at the beginning or middle of the fifth century.

The typology also leads to this conclusion, since if these goblets are a continuation of our Type 1 conical cups that disappeared toward the beginning of the fifth century, then the goblets made their appearance some time in the fifth century.

According to Isings (1957:139-140), this is Form 111, and the examples she has gathered indicate that they began to appear in the West in the fifth century and that the peak of their floruit was in the Middle Ages.

Similar goblets with slight modifications continue to appear in the Arab period in Palestine and the East. We have divided the Goblet family into two main types according to the shape of the base:

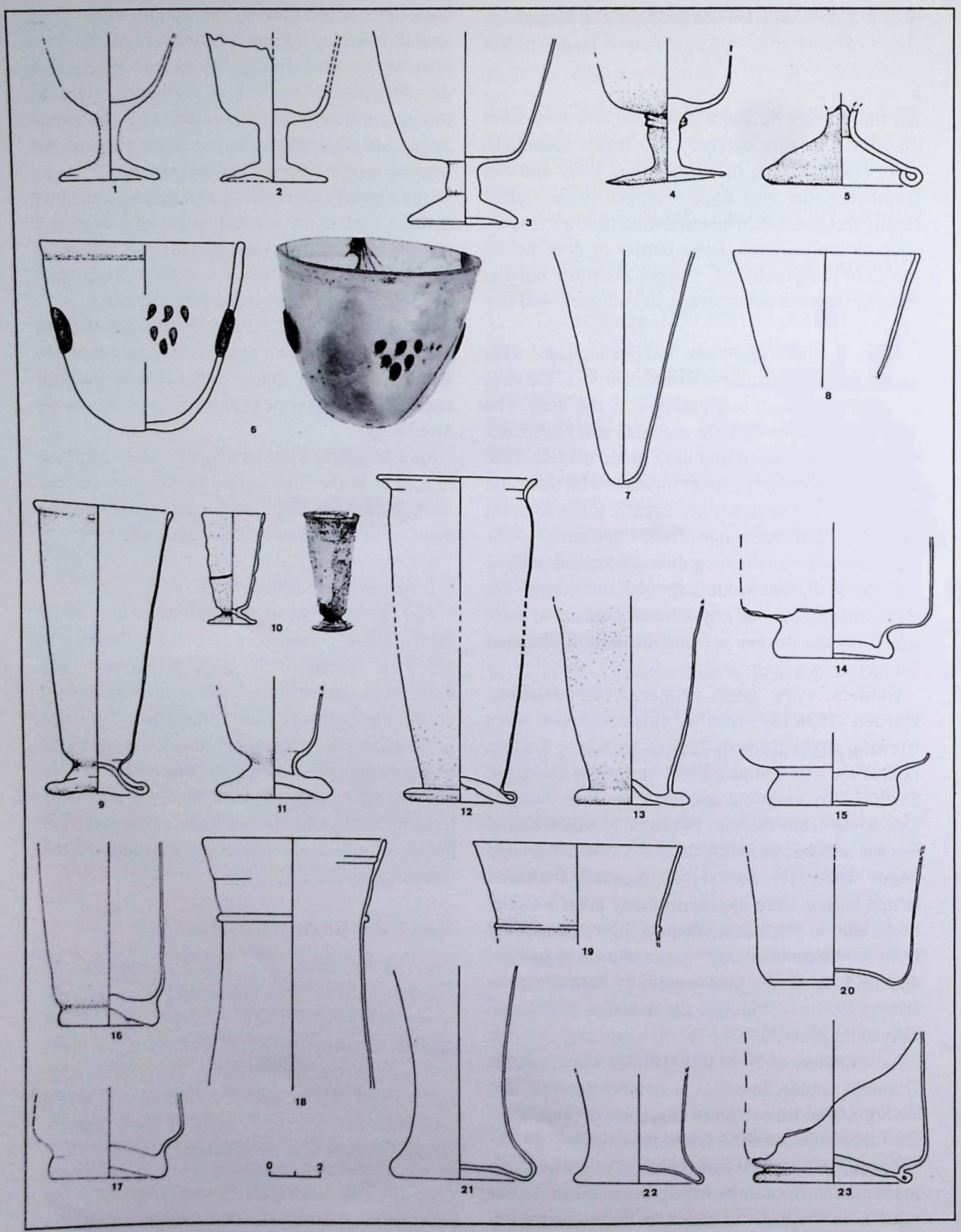
1. Concave Flat Base;
2. Raised Tubular Base-ring.

The first type has variations in the shape of the stem – straight or rounded coil, and in the shape of the body – cylindrical or hemispherical. The second type has a straight hollow or solid stem; it is possible that there were variations in the shape of the stem and body, but because of the small size of the fragments we were unable to distinguish between these different variants. Type 2 possibly has a raised tubular base-ring that began to appear before Type 1, at the end of the Byzantine period (Meyers 1989:237).[3]

Type 1 (Pl. III:1-4)

Over 50 flat bases were found in most of the excavation areas. They are usually sloppily made – not completely round, crooked, and not of uniform thickness. In most of them the pontil mark was visible in the concave center. They show a wide spectrum of shades: greenish, bluish, and a few yellowish and colorless; some of them have a yellowish-white or colored patina.

Type 1a: This subtype is characterized by a flat base with a concave center, a solid stem, and a hemispherical body.



Pl. III. Goblets and cups.

This is Type 5.3 of Barag (1970: 147 and parallels there), which he dates to the end of the Byzantine period. At Sardis, this is Type 1a and is found in assemblages from the fifth-seventh centuries (von Saldern 1980:55).

1 L. 803 Base diameter: 4 cm Stem height: 3 cm
Bluish

Type 1b: This subtype has a slightly concave flat base, a straight solid or rounded coil-shaped stem, and a cylindrical body. One outstanding goblet has a horizontal thread wound around the end of the stem at the junction with the body. This is Type 5.4 of Barag (1970:147),[4] for which he presents parallels from Kh. Kerak and Gerasa dated to the end of the Byzantine period. We found no parallels for the specimen with a stem decorated with a horizontal thread.

2 L. 313 Base diameter: 4.3 cm Stem height: 2.6 cm
Bluish

3 L. 308 Base diameter: 4 cm Stem height: 2.5 cm
Unusually thick; sky blue

4 L. 703 Base diameter: 4.5 cm Stem height: 3.1 cm
Thin, bluish

Type 2 (Pl. III:5)

Over 50 tubular base-rings were found in most of the excavation areas, 18 of which were highly concentrated in Locus 203.

This type is characterized by a raised concave base with a tubular rim, and a hollow or solid stem. This is Type 5.8 of Barag (1970:147 and parallels there). Goblets of this type were found in the synagogue at Bet Shean (Zori 1967:No. 11).

5 L. 514 Base diameter: 6 cm Thick; green and yellow

VESSELS WITH CRACKED-OFF RIMS

This category includes vessels produced by a different blowing technique and characterized by a simple cracked-off rim, at times filed, and the lack of a pontil mark on the base.

These vessels are not free-blown but apparently mold-blown, as Goldstein (1970:113-114) has suggested after systematically examining the specimens from the glassworks at Jalame, which included both vessels and fragments connected with and indicative of the production process at the site.

This type of conical vessel occurs in every region between the Middle East and Western Europe, primarily in the fourth-century contexts. In the East, they appear in Egypt, Syria, and Cyprus (Weinberg 1988:87-89).[5] In Palestine, they were found in Western Galilee, Hanita, Betzet, and, of course, Jalame, where the type was manufactured in quantity in the glassworks (Barag 1978:28-31, Fig. 14.67).

The vessels in our region differ from those in Egypt and the West mainly in the material itself and in the color. In our region, the glass is light greenish or colorless, usually thick, and at times with blue blobs. The examples from Egypt are dark green, the glass is thin, and the blobs are blue. In southern Russia, many olive-green conical vessels with blue blobs were found. In the West, conical vessels were very widespread and there appear to have been a number of centers for glass production. These conical vessels began to appear some time in the third and fourth centuries, and the blobs on them at times have colors other than blue – a phenomenon that has not been noted in the East. In general, the blob decoration is more characteristic and widespread in the West. The typical decorations of the conical vessels include horizontal lines incised on a wheel, blue bubbles, and, later on, horizontal glass threads.

We learn about the use of the conical vessels from both the examination of the contents remaining in them and the inscriptions on them, as well as from artistic depictions and literary evidence. Harden and Crowfoot (1931:197, 200), who found many of these vessels at Karanis containing remains of oil and soot, identified them as lamps; according to them, they were suspended inside metal candelabra and were perhaps also set in small wooden tripods.

Such vessels are featured in various artistic depictions where they could be interpreted as lamps. On a Jewish tombstone in one of the catacombs in Rome (Barag 1970:181) and on a mosaic from the synagogue at Hammat Tiberias, they appear together with the Holy Ark; Weinberg (1988:90) considers them to be glass lamps.

Literary evidence for their use as lamps appears

in a book by Paulus Silentianus (1865:2110),[6] who describes Santa Sophia; however, they could also be interpreted as drinking vessels. A conical vessel bearing an inscription of a blessing in Greek, of the type customarily incised on glass drinking vessels, was discovered in Hungary (Barag 1970:180).

Clearer proof of their use as drinking vessels is to be found in a depiction on a plate from Beth She'arim, on which a conical vessel appears with a juglet and a flask (Barag 1971:158-164, Fig. 100); it apparently served as a drinking vessel for the liquids in the other two vessels. The same plate depicts a suspended lamp, but it seems to resemble a goblet with a stem.

The rim could possibly also attest to the use of the vessels; those with cracked-off rims were lamps – in contrast to the ones that were filed and used as drinking vessels.

Two types of vessels belonging to the Conical Vessel family were found at Hammat Gader: (1) an intact specimen, possibly a cup or deep bowl with a rounded base, decorated with blue blobs and an incised horizontal line; (2) a rounded pointed base and an incised body. Neither of them has a pontil mark, in contrast to all the other vessels found at Hammat Gader, which have distinct pontil marks on their bases. We may therefore conclude that these were produced by the mold-blown technique and should be classified in the cracked-off rim category.

Type 1 (Pl. III:6)

One intact vessel was found in Locus 211 and many additional body fragments were revealed in the main pool of Area B (Locus 213) and in the channel running through Areas A and E, in Loci 506 and 507; perhaps these fragments belong to vessels of this type or to conical vessels of Type 2, since the blue blobs on them are not rounded but rather elongated and elliptical.

This type is characterized by a flattened rounded bottom, slightly concave at its center. The body is sloped or hemispherical and the rim is cracked-off. The vessel is decorated with two protruding rounded blue blobs and between them a triangular arrangement of six small blobs. A horizontal incision appears next to the rim, which was cleaned and slightly filed on its slope; the wall is very thick and the glass is colorless.

A close parallel from collections in Cyprus is mentioned by Harden (1987:113, No. 46).[7] Similar specimens appear at Hanita (Barag 1978:Fig. 14.67)[8] and are recorded by Hayes (1975:Nos. 380, 476).[9] Fragments of similar vessels, especially of rims and bodies, were found in large quantities in the glassworks at Jalame (Weinberg 1988:Fig. 4-46).

Vessels of this type, and mainly with these decorations, made their appearance in the East and the West in the fourth century.

6 L. 211 Rim diameter: 8.3 cm Height: 7 cm
Colorless

Type 2 (Pl. III:7, 8)

A bottom and body fragment was found in Locus 211. This type is characterized by a pointed rounded base, a conically sloped wall, and a cracked-off rim. The glass is very light green. It is relatively thin and partly covered with a black patina. The fragment lacks decoration, but it is possible that a decoration on the vessel's upper part has not been preserved.

Parallels to this type made their appearance throughout the Roman empire in the fourth century. This is Type 13.1 of Barag (1970:180-181), which he discusses in detail and for which he presents parallels from various sites in Palestine, Syria, Egypt, Corinth, and southern Russia.

7 L. 211 Light green

Fragment no. 8 is a rim with a sloping wall which was apparently produced by the mold-blown technique; the rim is neatly cracked-off and the wall shows traces of rotary polishing. From the diameter, form, color, and technique, we may assume that this is the upper part of a Type 2 conical vessel.

8 L. 325 Rim diameter: 7 cm Colorless

CUPS

(Pl. III)

This category includes open vessels, the height of which is greater than their diameter. The cups

found at Hammat Gader are mainly of the type characteristic of assemblages found at fourth-century sites in our region.

These are blown vessels; the majority are very thin and fragile. The dominant colors are light greenish and bluish. Their decoration, if any, consists of a thin horizontal thread on the wall of the vessel, either in its middle or near its rim.

Three intact cups and over 100 fragments of cup bases were found, the typological distribution of which was determined by their bases:

1. Cups with an Indented Base;
2. Cups with a Solid Base;
3. Cups with a Concave Bottom.

The intact cups with slight variations, belonging to Type 1 (Barag's Type 4.5), as well as fragments of a base, body, and rims, characterize this type.

No intact vessels of Type 2 (Barag's Type 4.6) were found; however, on the basis of the relatively large fragments revealed in the excavation, as well as parallels and familiarity with this type from other sites, especially in the northern part of the country, the identification appears to be certain.

Type 3, cups with concave bottoms, is less clear, since only base and body fragments, and not complete vessels, were found. Since rims that may be conclusively identified with this type are lacking, we do not know for certain whether these were indeed cups and not other vessels. Since the dimensions match those of cups and these three types were found in other assemblages in our region, e.g., in Samaria and Jalame, especially in fourth-century contexts (Weinberg 1988:60-63; Crowfoot 1957:Figs. 95:20, 22; 96:10), it is highly probable that these are indeed cups.

On the basis of the fragments that were found, this type can be divided into two variants:

(a) Cups with a straight or sloping wall;

(b) Cups with a concave wall.

Type 3a is widespread in our region, and even though rims were not found, it probably corresponds to Barag's Type 4.4. The continuation of the body and rim of Type 3b is not clear, but the wall probably continued into a flared rim. This is probably a type unique to Hammat Gader, as we were unable to find a clear parallel to it; it was not widespread in the Syro-Palestinian region or in the Roman world generally.

Type 1: Cups with an Indented Base
(Pl. III:9-13)

Three intact vessels showing slight variations, as well as base and body fragments, were found. The intact cups and two of the three bases were revealed in Area E (Locus 505). Other bases were found in Area C (Locus 313) together with fragments of everted rims.

This type is characterized by a thickened, rounded, everted rim, a conical body, pinchmarks at the junction of the body with the base, and an indented base-ring, sometimes solid and sometimes tubular. The diameter of the base is usually larger than that of the bottom part of the vessel's body. Cup no. 12 is slightly different: it is somewhat wider and taller, and the pinchmark on the lower part of the body is less pronounced, but, in contrast, the upper part of the body is either pinched or inverted and again flares outward at the rim. The base of cup no. 13 is the same as that of no. 12. The height of the cups ranges from 10 to 12 cm, the diameter of the base is 4-5 cm, and the diameter of the rim is 5.5-6.5 cm. The vessels are characterized by a very thin wall, especially in the middle; they are generally greenish-bluish and are usually covered inside and out with a white or colored patina. Cup no. 10 is decorated with a horizontal thread in the middle of the vessel.

Few vessels of this type have been published from either excavations or collections. This type is apparently characteristic of the second half of the fourth century and gradually disappears in the fifth century. It may have been a prototype of wine goblets that replaced it in the East and West in the fifth century. This type appears in the city of Samaria and is dated to the fourth and fifth centuries (Crowfoot 1957:416, Fig. 96:10). Dozens of bases and one almost complete vessel of this type were found at Jalame, in the dumps of the glassworks that is dated to the second half of the fourth century, as well as in the fill of the winepress that postdates the factory and is dated to the beginning of the fifth century. The excavators, however, are not certain whether this type was manufactured in the glassworks or imported from another production center (Weinberg 1988:62, Fig. 4:24).

A fragment of a base with a rimless body found in a pit (B285) at Ramat Ha-Nadiv is clearly associated with this type.[10] A similar type, although of different proportions, was found at sites in the West; Isings (1957:136-138) labels it Form 109C and presents parallels from sites dating to the mid-fourth to early fifth century.

9	L. 505	Rim diameter: 5.6 cm Height: 10:5 cm	Base diameter: 4.1 cm Greenish to colorless
10	L. 505	Rim diameter: 6 cm Height: 10.2 cm	Base diameter: 4.8 cm Greenish to colorless
11	L. 505		Base diameter: 4.6 cm Dark green
12	L. 505	Rim diameter: 6.2 cm	Base diameter: 4.4 cm Light greenish
13	L. 505		Base diameter: 4.4 cm Light greenish

Type 2: Cups with a Solid Base (Pl. III:14-19)

Some 50 complete bases with a continuation of the body and five rim fragments were found scattered in Areas B, C, D, and E. About 25 fragments come fron Locus 203.

This type is characterized by a very thick flat base, cylindrical body, and rounded rim, at times slightly thickened. The wall is straight or concave, mainly in its upper part. The diameter of the base is markedly smaller than the lower part of the cup, except in Cup no. 16, where the difference in diameter is not great. The height of the cups is unknown since only fragments were found, but it may be reconstructed from the base diameter and average rim, as well as the dimensions of this type at other sites where the base diameter ranges from 4 to 5 cm and the rim diameter from 7 to 8 cm. Therefore, the height of the cups of this type ranges from 11 to 13 cm. These cups are taller and cruder than those of Type 1.

The glass has a few tiny bubbles, and a white, colored or black patina. The colors are usually shades of green (light green, bluish-green). This type generally has a horizontal thread of the same color as the vessel; in our fragments the thread appears on the upper part of the vessel, before the point where it begins to flare.

This is Barag's Types 4.6 and 4.7, which he dates to the fourth century on the basis of vessels from Samaria, the Mount of Olives, Nahariya, and a group from the region of Tyre (Barag 1970: 143-144, Fig. 32:6, 7 and parallels there). This type was manufactured in the glassworks at Jalame, where over 350 fragments were found, primarily in its dumps, and therefore the excavators have dated it to the second half of the fourth century (Weinberg 1988:60, Fig. 4-23 and parallels there).

This is a distinct Syro-Palestinian type. It seems that examples of this type appear neither in Egypt nor in the West.

14	L. 211	Base diameter: 4.5 cm	Light greenish
15	L. 423	Base diameter: 5 cm	Green-blue
16	L. 305	Base diameter: 4 cm	Greenish
17	L. 305	Base diameter: 4.7 cm	Greenish
18	L. 211	Rim diameter: 7.5 cm	Light greenish
19	L. 502	Rim diameter: 8 cm	Light greenish

Type 3: Cups with a Concave Bottom (Pl. III)

Type 3a: Concave Bottom with Straight or Sloping Wall. Two bases with a continuation of a wall were found in Area C (Loci 321, 325).

This subtype is characterized by a flat, poorly-defined bottom, concave in its center, and a straight or slightly sloping wall. According to parallels, the rim is thickened, rounded, and everted. The bottom is an integral part of the vessel as regards technique, thickness, and characteristics. The glass is light greenish, very thin, and fragile.

Type 3a is found at many sites in our region, especially in the northern part of the country. This is Type 4.4 of Barag (1970:143), which he dates to the fourth century on the basis of examples from Samaria, Hanita, a group from the region of Tyre, as well as data compiled by Isings. It also appears, albeit in small quantities, in fourth-century contexts at Jalame (Weinberg 1988:63).[11]

It seems that this subtype made its appearance in the Late Roman period in both the East and West. The vessels of this subtype at Hammat Gader differ in proportions from those found in the West, as noted by Isings (1957:129, Form 106C), but all of them appear to belong to the same type. Type 3a may be a northern subtype, as it apparently does not appear in Egypt.

20	L. 325	Base diameter: 5.5 cm	Light greenish

Type 3b: Concave Base with a Concave Wall. Eight complete bases with a continuation of a wall and no rims were found in Areas C, D, and E; six were found in Locus 203 and the rest in Loci 211, 423, and 514.

This subtype is characterized by a flat, undefined base, concave in its center, and an inverted concave wall above the base, gradually becoming everted toward the rim. The glass is light greenish to colorless. Some vessels have a black patina and others a white or colored patina. The wall is very thin and the diameter of the base ranges from 4.5 to 6 cm.

No exact parallel has been found, although the small base fragments from Jalame (Weinberg 1988:Fig. 4-25, No. 200)[12] and Metzad Tamar (Erdman 1977:No. 102, Pl. 2) possibly belong to this subtype. This subtype is rare in our region. No complete cup of this type has been found or at least been published to date. The physical appearance of a complete vessel of this type is therefore unknown to us.

21 L. 211 Base diameter: 5.6 cm Colorless
22 L. 423 Base diameter: 5 cm Greenish

Type 4 (Pl. III)

A cup with a low tubular base-ring (which was made by the addition of a horizontal thread around the vessel), a concave bottom, and a cylindrical body was found in Locus 211. The diameter of the base is smaller than that of the body. Only one base of this type was found, and we may associate it with Isings' Form 108 (1957:134-135), which is characteristic of fourth-century assemblages. It may parallel a cup from Karanis (Harden 1936:No. 372), the upper part of which is similar to cups of our Type 2 with a solid base.

23 L. 211 Base diameter: 6 cm Bluish Very thin

SMALL NECKLESS VESSELS

(Pl. IV)

This category includes small neckless vessels that were used as tubes for creams and oils in the baths complex. These vessels are not widespread in our region and generally have very few parallels.

Type 1 (Pl. IV:1-2)

Two vessels of this type were found at Hammat Gader, a complete one in Locus 503 and the fragment of a rim and handle in Locus 505.

This type is characterized by a slightly concave, thickened, flattened base, a straight wall, and an outward-folded rim attached to a basket handle. Two horizontal threads or horizontal pinchmarks decorated the bottom of the intact vessel. The second vessel appears to have been larger, but it is difficult to determine its diameter with certainty.

We found no exact parallels to this type. A fragment from Jalame may possibly belong to it, although, according to the parallels there, it is to be associated with a type completely different from ours – a jar having a neck and rounded body. However, the fragment from Jalame is also too small to identify (Weinberg 1988:82, Fig. 4-42).

1 L. 503 Rim diameter: 4.5 cm Base diameter: 3.8 cm Height: 3.7 cm Bluish with dark green handle
2 L. 505 Rim diameter: at least 7 cm Bluish

Type 2 (Pl. IV:3)

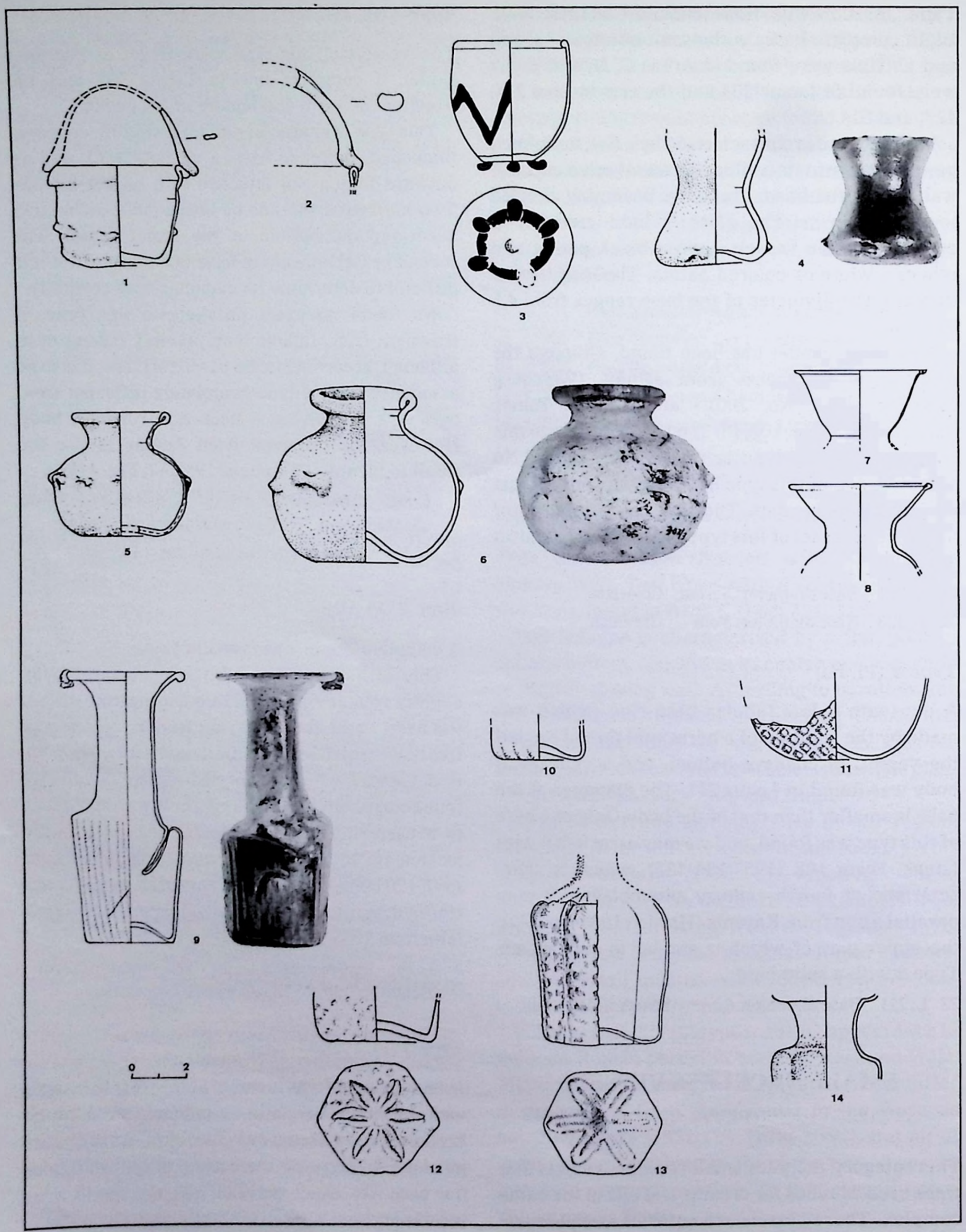
A complete vessel was found in Locus 201.

This is a small cup with a cylindrical body, slightly rounded in its middle and narrow toward the base, and a flat base-ring from which emerge five blobs which serve as the vessel's feet. The body is decorated with a thick red zigzag thread. We found no parallels to this type, only a resemblance to a base-ring belonging to the legs of a bottle located in the Newark Museum collection (Auth 1976:120, Nos. 50, 1501). Parallels to the dark zigzag decoration were found on jars at Beit Fajjar (Husseini 1935:Pl. LXXXV).

3 L. 201 Rim diameter: 4 cm Base diameter: 2 cm Height: 4.5 cm Bluish with red decoration

Type 3 (Pl. IV:4)

A rimless vessel was found in Locus 441. It is small with a concave base and an indented wall, which becomes everted toward the rim. A series of pinchmarks decorate the bottom of the wall, near the base. An exact parallel was not found. Our vessel may be similar to the bottle from Gush Halav belonging to an assemblage dated to the end of the



Pl. IV. Neckless vessels and jugs.

Byzantine period (Barag 1970:64, Pl. 14).

4 L. 441 Rim diameter: 4.05 cm Bluish

JARS

(Pl. IV)

This category includes vessels with a closed body, and short and wide neck. The jars were divided into two types according to the shape of the neck and rim.

Type 1 (Pl. IV:5, 6)

Two complete vessels were found in Loci 431 and 703, and a fragment of a rim and neck in Locus 502.

This type is characterized by a rounded or slightly squashed body, a bottom with a concave center, a short concave neck widening toward the rounded rim, an everted tube folding inward in the wide part of the body, and a row of horizontal pinchmarks. The diameter of the rim is ca. 5 cm; the glass is bluish and relatively thick.

This is Type 6.3-2 of Barag (1970:149-150, Pl. 33, 3-2); a similar jar from Gerasa was discovered in a room dating to the late Byzantine-early Arab periods.

The projecting pinchmark decoration is not especially widespread and was found on vessels at Gerasa, Cyprus, and Syria dated to the third-seventh centuries. Fragments of vessels with projecting pinchmarks belonging to the period of the glassworks were found at Jalame, thus dating them to the second half of the fourth century (Weinberg 1988:82, Fig. 4-43, Nos. 370-371).

5 L. 431 Rim diameter: 3.7 cm Base diameter: 3 cm Height: 4.5 cm Bluish

6 L. 703 Rim diameter: 4 cm Base diameter: 3.8 cm Height: 6.4 cm Bluish

Type 2 (Pl. IV:7, 8)

Two fragments were found in Loci 313 and 516.

This type is characterized by a short, wide, funnel-shaped neck, pinched or pressed at its bottom; the rim is folded inward.

A similar jar with depressions on its spherical body was found at Beit Fajjar and dated to the fourth century (Husseini 1935:175-177, Pl. LXXXV), as well at Samaria, most probably from the end of the third century (Crowfoot 1957:408-409, Fig. 94.5).

7 L. 313 Rim diameter: 4.5 cm Greenish

8 L. 516 Rim diameter: 4.7 cm Greenish

JUGS

(Pls. IV, V)

The Jug family includes closed containers with a neck and one handle. In contrast to the numerous bottles found at Hammat Gader, the quantity of jugs is not great, nor is there much variety in jug types. These vessels, like the bottles and amphorae, were used as containers for perfumes and oils.

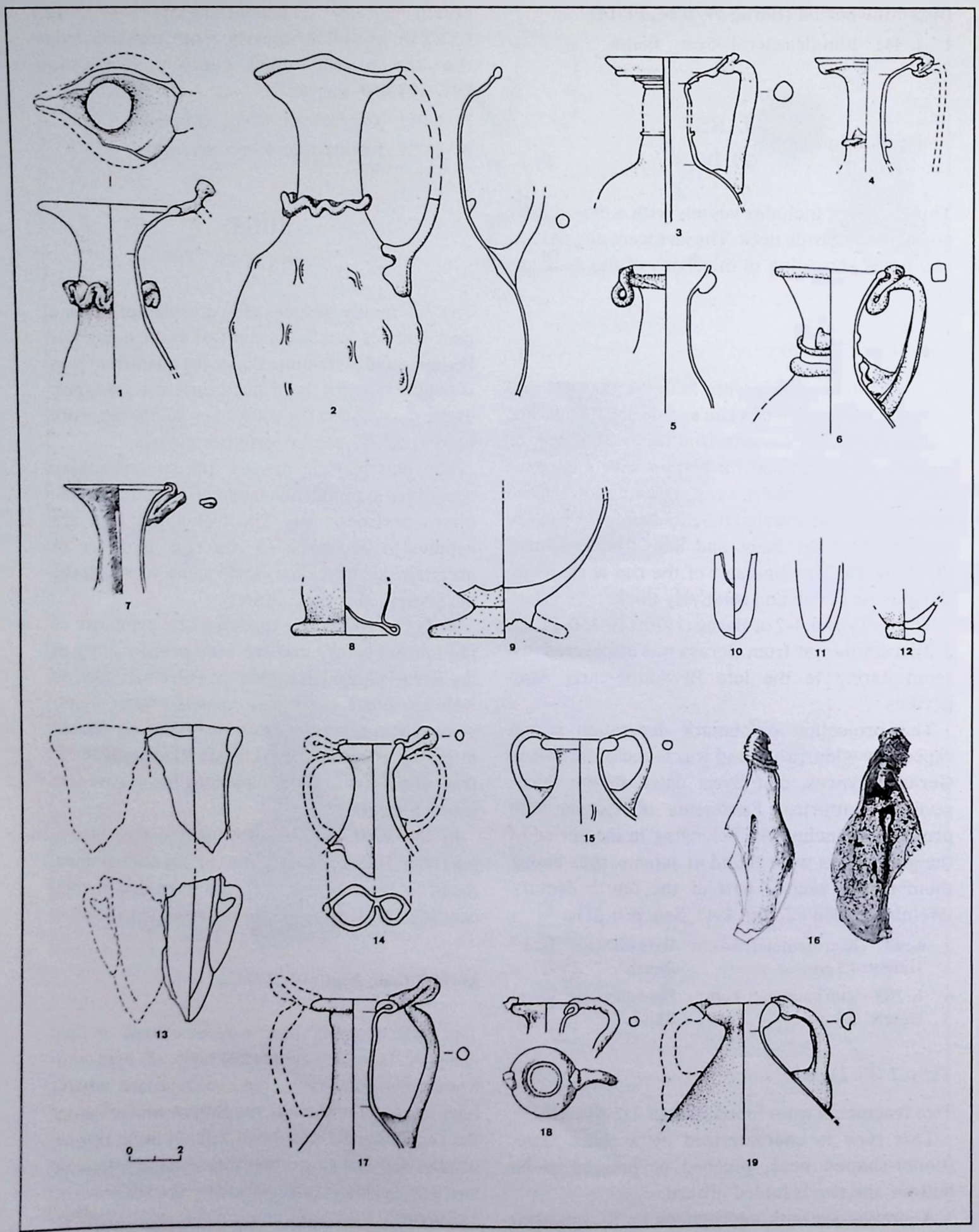
The jugs may be divided into two categories according to production technique – either mold-blown or free-blown. The free-blown jugs are subdivided according to rim type in order to ascertain identification, since some vessels were not preserved in their entirety.

Both categories are characteristic primarily of the fourth century and are widespread mainly in the Syro-Palestinian region. In Palestine, jugs, as well as other cosmetics vessels, were found primarily in graves; the custom of placing vessels in graves is attested in Genesis Rabbah 30:9: "A flask of balsam ... is placed among the graves and leaves a scent."

In the West, jugs resembling the free-blown jugs from Hammat Gader to a certain degree were found in assemblages from the third and fourth centuries; however, they are not exact parallels.

Mold-Blown Jugs (Pl. IV:9-14)

Two main types of jugs were discerned in this category: (1) with a cylindrical body; (2) jugs with a hexagonal body. Type 1 has two variations in both body form and, especially, the pattern appearing on the vessel. Type 2 was found without neck, rim or handle, and our suggestion that these are jugs is based on an almost exact parallel of the vessel form and pattern.



Pl. V. Jugs, tubes, amphoriskoi and flask.

Type 1: Jugs with a Cylindrical Body (Pl. IV:9-11)

A complete vessel was found in Locus 313 and the fragment of a base in Locus 505.

Type 1a: This subtype is characterized by a concave base, cylindrical body flaring slightly at the shoulder, a long cylindrical, slightly concave neck, and a thickened everted rim. The handle is missing and there is only one junction between it and the rim. The vessel is decorated with a horizontal ribbing across the body, which is representative of its mold-blown production technique. It is distorted and asymmetrical. Hayes (1975:113, Nos. 428-431) presents exact parallels from the collection in Ontario and associates them with Syro-Palestinian vessels originating most probably in Tubas and dating to the second half of the fourth century. Similar fragments which may also be associated with this subtype were found at Jalame (Weinberg 1988:79-80, No. 343) and Karanis (Harden 1936:Pl. XIX, No. 701).

9 L. 313 Rim diameter: 4.5 cm Base diameter: 3.4 cm Height: 10 cm Greenish

10 L. 505 Base diameter: 3.3 cm Bluish

Type 1b: One fragment of a base and the beginning of a rounded cylindrical body was found in Locus 305, and body fragments with a similar pattern were revealed in other loci.

This subtype is characterized by its undefined base with a concave center and cylindrical wall, but primarily by the stamped pattern of densely-spaced small diamonds on its wall.

A parallel jug, located in Ontario (Hayes 1975: 112, Pl. 27, No. 425; see parallels, p. 12), has a similar pattern and bottom and is dated to the late third to early fourth century.

11 L. 305 Bottom diameter: ca. 3.5 cm Greenish; thin glass

Type 2: Jugs with a Hexagonal Body (Pl. IV:12-14)

Three fragments of this type were found in Loci 211, 213, and 803.

Fragment no. 12 has a base with a concave center and six straight sides. Fragment no. 13 also has a base with a concave center and six straight sides that have been preserved up to the slightly rounded shoulder. Fragment no. 14 has a short concave neck and a hexagonal body. The bases of Nos. 12 and 13 are bluish, while fragment no. 13 is purplish. The decoration on the three fragments consists of small, densely-spaced impressions all over the body. The impression of a rosette having six petals, each bisected by a line, appears on the two bases.

A parallel to the hexagonal jugs may be found in the Ontario collection (Hayes 1975:87, 112-113, Pl. 27, Nos. 264, 427). Both the body form and part of the stamped pattern on the two bases having body parts (nos. 12 and 13) match; however, the Ontario jug has a different pattern of decoration. The body form and stamped pattern of fragment no. 14 are similar to those of jugs from Ontario, but the neck on the Hammat Gader fragment is short and wide, while the neck characterizing the jugs described by Hayes is long and narrow. The jugs in Ontario originated in Syria and date to the fourth century.

12 L. 803 Base diameter: 4.5 cm Bluish; very thin glass

13 L. 213 Base diameter: 4.3 cm Bluish; very thin glass

14 L. 211 Light purple; very thin glass

Free-blown Jugs (Pl. V:1-7)

Type 1: Trefoil Rim (Pl. V:1-2)

Over 20 fragments of trefoil rims were found in most of the excavation areas.

This type is characterized by a concave cylindrical neck widening toward the body and flaring at the rim, a thickened everted and inward-folded rim, a trefoil mouth, a handle with a protrusion from the rim to the slouched shoulder, and an elongated rounded body. The preserved fragments of the lower part of the neck are decorated with a thick horizontal zigzag thread. The color of the thread on jug no. 1, as well as of the remaining part of the handle, is reddish-brown. Jug no. 2 is decorated with horizontal pinchmarks scattered all over the body. The thread and the handle are of the same color.

Roman and Byzantine jugs with trefoil rims are

found in the East and West. Isings (1957: 74, 104-106, 154-156, Forms 56, 88, 124) presents examples from early first- to fourth-century assemblages in the West. This is Type 8.13 of Barag (1970:162), and he presents examples from Nazareth and Jerusalem dating from the late third and fourth centuries. At Khirbet Kerak, a jug with a trefoil rim was found in the level of the church, i.e., the sixth century (Delougaz and Haines 1960: 25, Pl. 60.1). Not all of the examples are decorated. The pinchmark decoration usually occurs on jars (Vessberg 1952:146, Pl. IV, 22) or bottles (Weinberg 1988:84, Fig. 4-43, No. 178); the row of horizontal pinchmarks resembles Barag's Type 6.3-2, and not our scattered or vertical pinchmarks appearing on other vessels.

Barag (1970:200, Pl. 44.6)[13] presents an example of vertical pinchmarks on a vessel from an undated assemblage at Beth Shean, claiming that the protrusions there are unusual. He dates the vessel to the end of the Roman period on the basis of its form. An exact parallel to our two jugs has not been published, but from the above data we may assume that they belong to the Late Roman period. Hayes (1975:60-61, Pl. 12, No. 157) presents a parallel from Syria with vertical protrusions and dates it to the end of the second to mid-third century.

1 L. 324 Rim diameter: 5.5 cm Relatively thick glass
Bluish with brown decoration

2 L. 428 Rim diameter: 6 cm
Greenish

Type 2: Funnel-Shaped Rim (Pl. V:3-5)

Six rim and neck fragments and one base were found in Loci 211, 506, and 516.

The type is characterized by a simple funnel-shaped rim, a handle with a round incision from the rim to the shoulder, a cylindrical neck widening toward the shoulder, and a rounded body. Fragment no. 4 was found with its bottom, which is flattened and slightly thickened in the center; a thin, strong blue-green thread appears on the neck, handle and base. The body may have been rounded, elongated, bulbous or piriform. The decoration characteristic of this type is one horizontal thread appearing beneath the rim and another on the lower part of the neck. Jug no. 3 has a thick horizontal thread beneath the rim followed by two thin threads beneath it. The threads are either the same color as the vessel (as on jar no. 3) or of contrasting colors (bright blue-green on jar no. 4 or yellow on jar no. 5).

The distribution of these jugs is primarily in the Syro-Palestinian region, although they also occur in third- and mainly fourth-century assemblages in the West. At Jalame, this type was manufactured in the glassworks in two variations: (1) with a single horizontal thread beneath the rim; (2) with several horizontal threads beneath the rim, thus dating it to the second half of the fourth century (see Weinberg 1988:65, Fig. 4-27, 28 for parallels).

3 L. 506 Rim diameter: 5.5 cm
Greenish

4 L. 516 Rim diameter: 3.8 cm Base Rim: 2.7 cm
Yellowish; colorless with blue-green threads

5 L. 211 Rim diameter: 3.4 cm
Bluish with thick yellow thread

Type 3: Everted Inward-folded Rim (Pl. V:6, 7)

Five fragments of a rim, neck, shoulder, and handle (or parts of it) were found in Locus 313.

This type is characterized by a concave cylindrical neck flaring toward the shoulder and rim, an everted inward-folded rim, and a single handle extending from the rim to the shoulder. The handles have a round or square incision. The lower part of the neck of jug no. 6 has a spiral thread of the same color as the vessel.

The distribution of these vessels, like that of Type 2, is primarily in the Syro-Palestinian region and in the West. Type 3 is possibly Isings' Form 120a, which is typical of the Late Roman period, but differs slightly in the position of the handle joint as well as in the design of the rim and its decoration. An exact parallel (at least with regard to the preserved upper part of the vessel) is the jug from Nazareth dated by Barag (1970:61, Pl. 36, 14) to the fourth century.

6 L. 313 Rim diameter: 4 cm Bluish

7 L. 313 Rim diameter: 4.3 cm Bluish

Miscellaneous Jugs (Pl. V:8, 9)

Indented Base (Pl. V:8)

A fragment of a base, concave in its center and

hollow and folded at its edges, was found in Locus 440. Its wall is thin and convex.

Bases of this type were found in the glassworks at Jalame dating from the second half of the fourth century (Weinberg 1988:65-66, Fig. 4-29) and probably belong to the free-blown jugs of our Type 2 and perhaps also Type 3.

8 L. 440 Base diameter: 4 cm Greenish; yellow patina

Solid Base-ring (Pl. V:9)

A single fragment was found in Locus 327.

The fragment is of a solid base-ring and spherical body, probably of a jug; however, it is not indicative and therefore we find it difficult to present parallels. Perhaps it is of a jug base of the types found at Shavei Zion (Barag 1967:68, Figs. 16, 18), but there too the fragments are small and do not permit identification.

9 L. 327 Base diameter: 5.3 cm Bluish, thick in its lower part

TUBES

(Pl. V:10-12)

Tubes are small elongated cylindrical vessels serving as containers for cosmetics. In Palestine they appear mainly in the Late Roman and Byzantine periods, but only a few examples have been published (Barag 1970:173-174). In the West they appear earlier; Isings (1957:41) presents examples (Form 27) from the first-second century C.E.

The fragments of bases found at Hammat Gader may be divided into three variations:

Rounded and Pointed Base (Pl. V:10)

A fragment of a base and wall was found in Locus 101.

The base is rounded and pointed, and has a pontil mark; its lower part is thick, and its wall thin. The body is cylindrical. It is similar to Type 11.1 of Barag (1970:173-174) and, on the basis of parallels, is dated to the Late Roman period.

10 L. 101 Body diameter: 1.5 cm Thick blue glass

Flattened Base (Pl. V:11)

A fragment was found in Locus 105. It has a cylindrical body narrowing toward the base and a pontil mark. According to Barag (1970:173-174), this is Type 11.2 and, on the basis of parallels, is dated to the Byzantine period.

11 L. 105 Body diameter: 1.8 cm Light greenish glass

Affixed Flat Base (Pl. V:12)

A single fragment of the bottom and the beginning of a flaring wall of what was probably a tube was found in Phase I of Locus 514. A surface slightly wider than the diameter of the bottom and thicker than it is affixed to the bottom of the vessel. This may possibly be part of the base of the bowl of a lamp with a hollow wick tube in its center. It appears to be Type 11.2 of Barag (1970:173-174), which is early and dated to the first and second centuries.

12 L. 514 Yellow glass

Double Tubes (Pl. V:13-16)

The double tube is a long cylindrical container divided lengthwise by the application of pressure in the middle before the glass hardened.

These vessels, like the single tubes, were used as containers for cosmetics, probably kohl, since many vessels were found to contain glass, ivory or bronze spoons or spatulas (applicators). This is a special form which is characteristic of Palestine and not Syria; a detailed discussion of this form, its origin, and parallels appears in Stern 1977:115-118.

The widespread appearance of these vessels was first noted in various fourth-century burial assemblages, and they continued to be used, with slight variations (mainly the addition of handles and various decorations), until the seventh century.

There are two types at Hammat Gader, neither of which is decorated; one resembles the regular double tube, with an elongated cylindrical body divided into two; the other resembles amphoriskoi, where the body is bi-tubular, but has a single neck and rim. The neck was created by a flaring of the body resulting from pressing it and dividing it into two.

Type 1 (Pl. V:13)

Two fragments were found, one of the bottom part of a tube with a loop handle and the beginning of the junction to the tube connected to it, the other of the upper part of a thickened, unevenly inward-folded rim, a slightly concave wall, also with the junction, and the beginning of the rim and wall of the adjacent tube. The fragments were found in Locus 313 and appear to belong to the same vessel.

Additional body and bottom fragments of the double tube were found in the excavation, but it is difficult to determine to which of the types they belong and the type of the handles, rim or decorations.

No exact parallel of Type 1 has been found, but it possibly resembles Barag's Type 12.4, mainly in the position of the handle on the lower part of its wall. The fragment that has survived is too small for one to ascertain whether it includes the rim of the vessel. These vessels are usually decorated with threads, but the fragments from Hammat Gader lack any decoration; the many handles that were discovered may belong to this form. No exact parallel was found; however, because of the simple, non-stylized, and undecorated character of these vessels, they should be attributed to the initial appearance of the double tube in the fourth century. Toward the fifth and sixth centuries the shape of the handles became sophisticated and more intricate, decorated in an almost Baroque style (Stern 1977:117) like Barag's Type 2.5-10.

13 L. 313 Rim diameter: ca. 7 cm
Body diameter: ca. 4 cm Green; slightly thick

Type 2 (Pl. V:14-16)

Type 2a: A fragment of a rim, neck and beginning of a body was found in Locus 506.

The subtype is characterized by a thickened, everted, and inward-folded rim, a loop handle terminating in a fold ascending to the top, a narrow concave neck, and at its end a flaring body divided lengthwise in the middle.

Our fragment lacks decoration and the vessel's color is the same as that of the handles – light greenish. The form and continuation of the body are not clear, but the upper part resembles a vessel from Beth Shean having a sack-shaped body, in the Ontario collection, dated to the second half of the third century (Hayes 1975:Pl. 28, No. 446).

14 L. 506 Rim diameter: 2.5 cm Light greenish

Type 2b: Two fragments of a rim and neck were found in Loci 201 and 327. One of them has two handles extending from the rim to the end of the neck.

This subtype is characterized by an everted, almost horizontal, inward-folded rim, a narrow, slightly concave neck, and two loop handles from the rim to the shoulder. At the end of the neck there is a division into two lengthwise containers. The vessels are light greenish and the handles on fragment no. 15 are bright turquoise with red stripes. A description of handles in these colors appears in Hayes' example from Beth Shean (1975:Pl. 28, No. 446). No parallel to this type has been found, at least in the material published to date.

15 L. 201 Rim diameter: 2.8 cm Light greenish; turquoise and red handles

Another vessel, no. 16, the lower part of which has been preserved (or perhaps this is the whole vessel), is a double tube with a sack-shaped body. However, its upper part appears to have been destroyed in the production process and it is not clear why it has shown up at Hammat Gader.

16 L. 213 Light greenish

AMPHORISKOI

(Pl. V:17, 18)

This category consists of closed containers having a neck and two handles from the rim to the shoulder. Isolated fragments of a rim, neck, beginning of a body, and handles all belong to one type and are characteristic of burial assemblages from the fifth century. The amphoriskoi, like the tubes, were used as containers for cosmetics, and bronze spatulas (applicators) – a conclusive indicator of this function (Barag 1974:81) – were found in some of them.

Three fragments of a rim, neck, handles and beginning of a body were found in Loci 213 and 324. They are characterized by an everted, almost horizontal, inward-folded rim, a long and narrow

cylindrical neck, and a slouched shoulder; a loop handle with a protrusion on its top extends from the rim to the shoulder; the handle has a round cross section. The vessels are undecorated and, unlike the other vessels at Hammat Gader, are colored dark green and dark blue.

Similar amphoriskoi of Barag's Type 10.4 appear in fifth century graves from Kefar Dikhrin and Beit Fajjar (Barag 1970:169) and in graves discovered near Netiv Ha-Lamed He (Barag 1974:Fig. 2.1).

17 L. 324 Rim diameter: 3.5 cm Dark green

18 L. 213 Rim diameter: 2.7 cm Dark blue

FLASKS

(Pl. V:19)

One fragment of this type of vessel – a lentoid jug – was found in Locus 713. It consists of a thickened, everted rim, a short and narrow neck, the beginning of a widening body, and a handle from the rim to the shoulder.

We found no parallels or early vessels of this type.

19 L. 713 Rim diameter: 2.4 cm Brown

BOTTLES

(Pls. VI-IX)

The category of bottles comprises vessels with a closed body and neck.

Seventeen intact bottles and over a thousand fragments of bottle rims and necks were found at Hammat Gader.

This is the largest and most diverse family of vessels found at the site. The diversity finds expression in their sizes, the heights ranging from 5 to 25 cm,[14] and in the great variety of rim, body and base shapes. This variety of sizes and shapes is indicative of their various functions.

The small bottles and their many variations, which were most probably used as containers for oils and perfumes, outnumber the others. This fact reflects the nature of the site, which was dedicated to therapy and body care. Most of the fragments found are of rims and necks, and the minority consist of bases.

The time span for the use of bottles at Hammat Gader is great – from the Roman period up to and including the Arab period – in contrast to the other families of vessels that were used for relatively shorter and more specific periods of time.

Bottles with a Rounded Body (Pls. VI-VIII)

Type 1: Funnel-shaped Mouth (Pl. VI)

Six complete vessels and dozens of rim and neck fragments were revealed, all of which had in common a rounded body and a cylindrical neck that flared and opened toward the rim.

This type is characteristic of the Syro-Palestinian region in the Late Roman period, but similar bottles were also found in Egypt and Cyprus.

The division into Types 1a and 1b is based on the rim shape and the variations in rim and neck decorations within the subtypes.

Type 1a: Simple Rim. Three variants appear: (1) simple rim; (2) simple rim with a single horizontal thread; (3) simple rim decorated with horizontal threads.

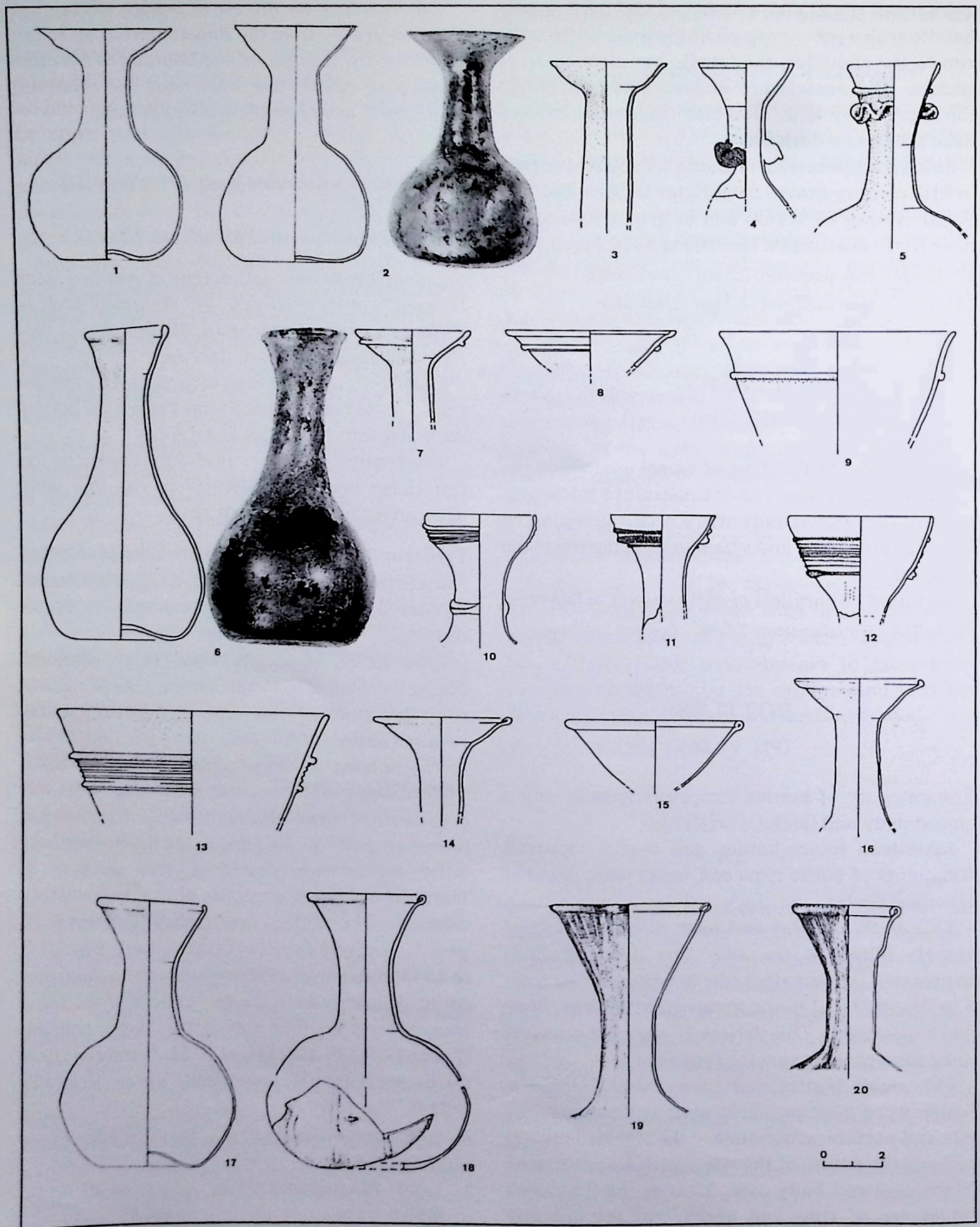
Type 1a (1) – Simple Rim. Three complete bottles were found in Locus 506 and over 20 rim and neck fragments of this type in most of the excavation areas.

This variant is characterized by a flat base, slightly concave in its center, a rounded body, and a cylindrical neck flaring toward the rounded funnel-shaped rim. In some cases the proportions differ and the neck is relatively long, as in no. 3. The glass is thin and greenish, bluish, yellowish or colorless. The bottles are usually undecorated. Vessels similar to Type 1a (1) are Barag's Type 15.3 or 15.15 from burial cave assemblages in Palestine dating primarily from the second half of the third century until the first half of the fourth century (Barag 1970:188, 192, Pls. 41.3, 42.15 and parallels there). A similar type appears in Cyprus (Vessberg 1952:Pl. VII, 13).

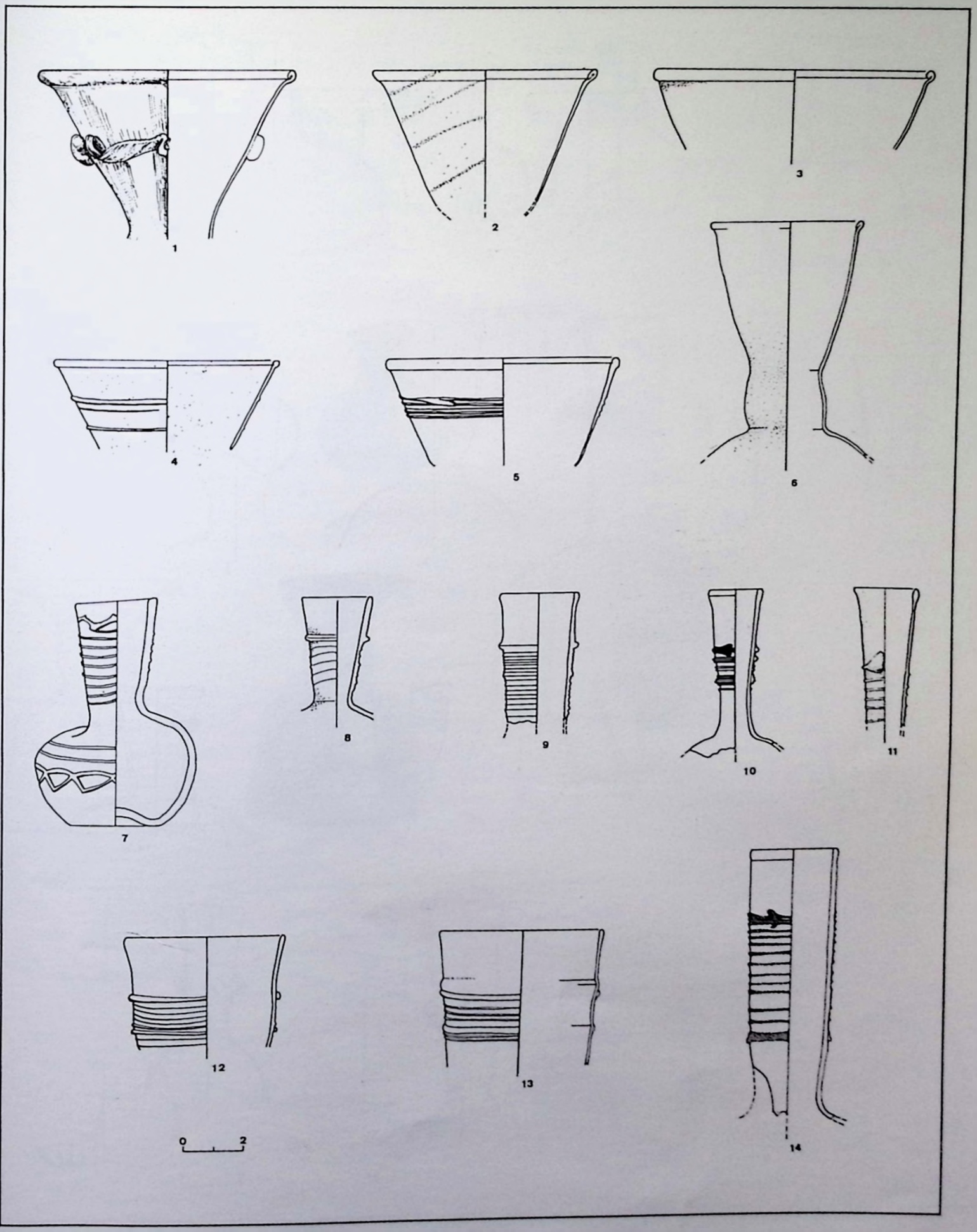
1 L. 506 Rim diameter: 4.7 cm Base diameter: 3.2 cm Height: 8.5 cm Bluish

2 L. 506 Rim diameter: 4.4 cm Base diameter: 3.8 cm Height: 8.8 cm Yellowish

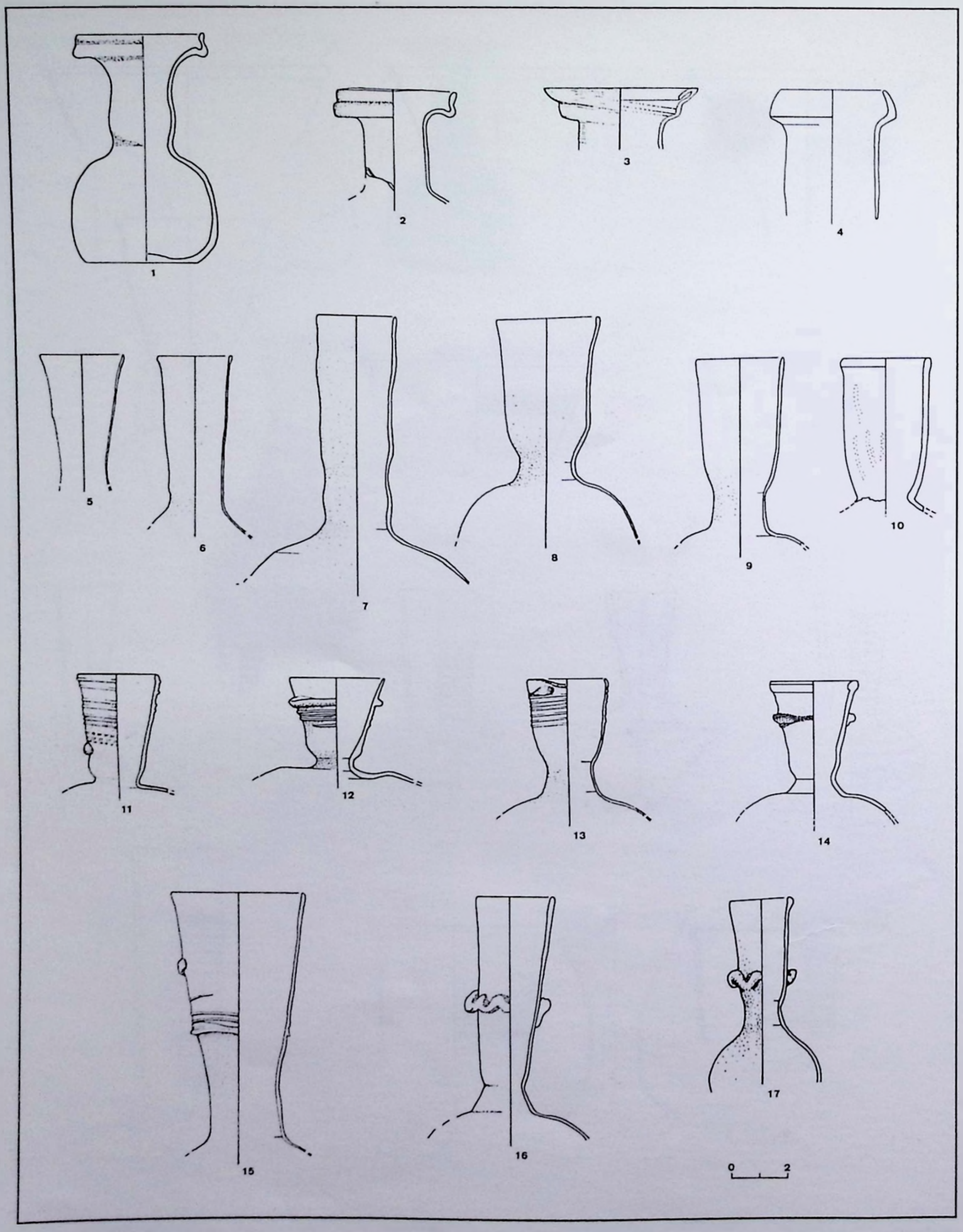
3 L. 430 Rim diameter: 4.2 cm Bluish; white patina



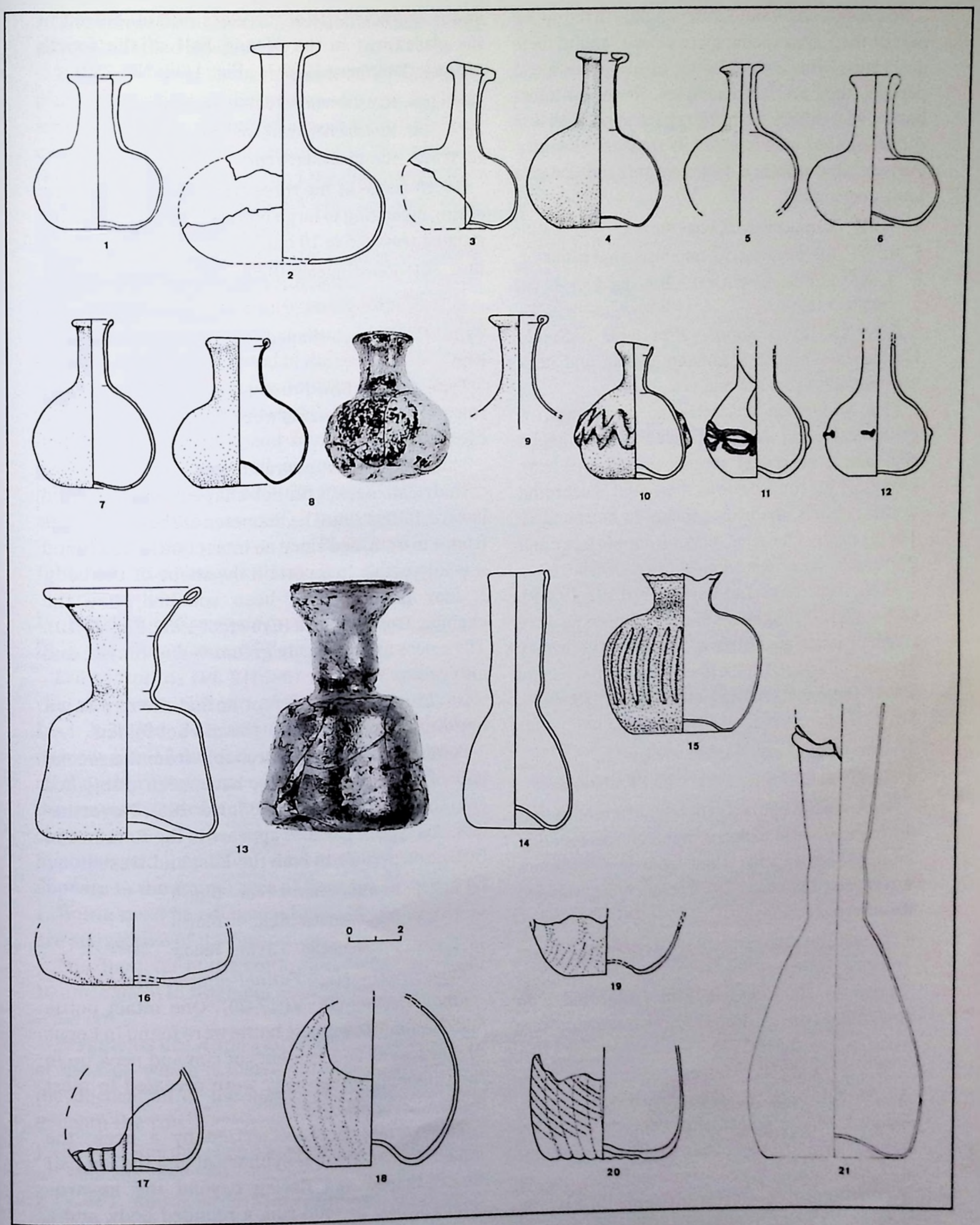
Pl. VI. Bottles.



Pl. VII. Bottles.



Pl. VIII. Bottles.



Pl. IX. Bottles.

Fragments nos. 4 and 5 differ slightly in the upper part of their rims (being more closed) and in their decoration with a thick wavy band on the neck; perhaps they are late examples. No. 6 (an intact bottle) also differs from the others in both its less funnel-shaped mouth and in its slouched shoulder. Perhaps this reflects a decline of this subtype or a late development.

4 L. 327 Rim diameter: 3.3 cm Brown

5 L. 703 Rim diameter: 3.2 cm Blue; silver patina

6 L. 506 Rim diameter: 3 cm Base diameter: 4.5 cm
Height: 5.11 cm Greenish; white patina

Type 1a (2) – Simple Rim with a Single Horizontal Thread. Fragments of rim and neck were found in Loci 325 and 516.

This variant is characterized by a narrow cylindrical neck, simple rounded funnel-shaped rim, and a horizontal thread beneath the rim, usually of the same color as the vessel. According to the parallels, the body appears to be rounded. The diameter of the rims ranges from 4 to 6 cm, and the vessels' colors are bluish and yellowish.

This is Type 15.17-1 of Barag (1970:192, 193, Pl. 42, No. 17-1).[15] Fragments of rims of this type were found in large quantities at Jalame, where they were manufactured in the glassworks in the second half of the fourth century (Weinberg 1988:69-70, Fig. 4-31).

7 L. 516 Rim diameter: 4.2 cm Yellow

8 L. 325 Rim diameter: 6 cm Bluish; white patina

No. 9, a large bottle, is slightly different in that the funnel-shaped mouth is higher. It was found in Locus 505 and a similar fragment in the same colors was revealed in Locus 516. The glass is green and the thread purple.

9 L. 505 Rim diameter: 8 cm Green glass, purple thread

Type 1a (3) – Simple Rim Decorated with Horizontal Threads. Rim and neck fragments were found in Loci 106 and 313.

This variant is characterized by a narrow cylindrical neck flaring toward the simple, rounded, funnel-shaped rim, beneath which are several horizontal threads. In no. 10, the horizontal thread decorating the neck is thicker than those on the rim. This is Type 15.20 of Barag (1970:193, Pl. 42.20);[16] a similar fragment was found at Jalame and is characteristic of the glass manufactured in the glassworks in the second half of the fourth century (Weinberg 1988:71, Fig. 4-32, No. 282).

10 L. 106 Rim diameter: 4 cm Greenish

11 L. 313 Rim diameter: 3.7 cm Bluish

12 L. 327 Rim diameter: 5 cm Colorless

No. 13 is one of the three fragments of this type of rim, belonging to large bottles having a diameter ranging from 8.5 to 10 cm.

13 L. 803 Rim diameter: 10 cm Bluish with dark threads

Type 1b: Funnel-shaped Mouth, Inward-folded Rim

Type 1b (1) – Low Funnel-shaped Mouth. Eight rim and neck fragments were found in most of the excavation areas.

This variant is characterized by a narrow cylindrical neck, funnel-shaped mouth, and inward-folded rim. The diameter of the rim ranges from 4 to 6 cm, and since no intact bottle was found it is impossible to ascertain the shape of the body. It may possibly have been rounded, like the example from Samaria (Crowfoot 1957:Fig. 94.10). The colors are primarily greenish and bluish, and also yellow.

No. 16 is slightly different in that the rim is not uniform and partially straight and not folded.

Parallels from Jalame, probably from the second half of the fourth century, have been published (Weinberg 1988: 72, Fig. 4.33, No. 285). Nevertheless, this type of rim also appears in the Roman and Byzantine periods in both the East and West.

14 L. 503 Rim diameter: 4.2 cm Bluish

15 L. 313 Rim diameter: 6 cm Bluish

16 L. 621 Rim diameter: 5.3 cm Yellow

Type 1b (2) – High Funnel-shaped Mouth

Small Bottles (Pl. VI:17-20). One intact bottle and one almost complete bottle were found in Locus 613, and some 20 fragments of rim and neck up to the beginning of the body were revealed in most excavation areas.

This variant is characterized by a neck, the bottom half of which is cylindrical and the top half funnel-shaped and flaring beyond the inward-folded hollow or solid rim, a rounded body, and a concave base.

The rim of bottle no. 13 is not uniform and is only partially folded inward.

Bottle no. 14 is decorated with small horizontal pinchmarks across the body and vertical pinchmarks along the length of almost the whole body, creating a pattern of bifurcating ribs. The height of these bottles is ca. 10 cm and the diameter of their rims ranges from 3.8 to 5.5 cm. The colors are usually greenish and bluish.

Such bottles were found in a grave at Hanita (Barag 1978:26-27, Fig. 13, Nos. 50-53)[17] from the third to mid-fourth century; Barag attributes this type of rim to the fourth century. They were also found at Jalame and dated to the second half of the fourth century (Weinberg 1988:72, Fig. 4-33, No. 284; Fig. 4-39, No. 351).[18] Parallels to the decorated bottle from the third and fourth centuries were found at Sardis, as well as in Syria and Mesopotamia (von Saldern 1980:20, Pl. 4, No. 91).

17 L. 613 Rim diameter: 4 cm Base diameter: 3.5 cm Height: 9.7 cm Bluish

18 L. 613 Rim diameter: 4.3 cm Base diameter: 4 cm Height: 10 cm Bluish

19 L. 506 Rim diameter: 5.5 cm Bluish

20 L. 506 Rim diameter: 3.8 cm Bluish

Large Bottles (Pl. VII:1-6). Six fragments of the rim and the upper part of the neck were found in Loci 202, 306, 313, and 503. In nos. 1 and 6 the narrow part of the neck was also preserved, but in all the other fragments only the part flaring beyond the inward-folded tubular rim remains and the continuation of the narrow neck can only be hypothesized. A thick wavy horizontal thread appears in the funnel area of the neck of bottle no. 1. Bottle no. 2 has diagonal lines of bubbles which are suggestive of its decoration.

The diameter of the bottle rims ranges from 8 to 10 cm, except in fragment no. 6, where it is smaller – 5.8 cm.

Fragments nos. 4 and 5 differ slightly in the shape of the rim, which is folded but not tubular, and in the decoration of the horizontal thread attached beneath the rim.

1 L. 506 Rim diameter: 8.5 cm Bluish; thread of same color as vessel

2 L. 313 Rim diameter: 8 cm Greenish; yellowish line decoration

3 L. 202 Rim diameter: 10 cm Bluish

4 L. 106 Rim diameter: 7.5 cm Bluish; threads of same color as vessel

5 L. 106 Rim diameter: 8.5 cm Bluish; brown threads

6 L. 727 Rim diameter: 5.8 cm Bluish

Type 2: Simple Rim with a Cylindrical Neck (Pl. VII)

This type includes bottles with long cylindrical necks, in some cases flaring near the generally simple and rounded rim.

The type is divided into two subtypes: (a) straight necks; (b) puffy necks created by pinching in the lower part of the neck, at the junction with the shoulder.

It was characteristic and widespread mainly in the Syro-Palestinian region in the fifth-seventh centuries.

Type 2a: This subtype includes decorated or smooth small and large bottles.

Type 2a (1) – Decorated Bottles (Pl. VII). One complete small bottle was found in Locus 506 as well as dozens of fragments in most of the excavation areas, including some eight fragments of large bottles.

This variant is characterized by a rounded simple rim, a narrow and long cylindrical neck, in some cases slightly flared near the rim and in others with traces of a pinchmark at the bottom of the neck, which is characteristic of Type 2b, a rounded body, and a flat base, concave in its center.

The characteristic decoration is a thin horizontal thread attached to the neck, in the center or slightly beneath the rim and extending up to the junction with the body.

No. 7, an intact bottle, is also decorated on the neck with thicker wavy threads; the decoration is repeated in the middle of the body, where two thin horizontal threads are attached to the upper part and thick wavy or zigzag threads create a kind of horizontal chain of triangles on the rounded body.

The diameter of the rim of the small bottles ranges from 2 to 3 cm, while that of the large bottles ranges from 3.5 to 6 cm. The height of the small bottles is 8.3 cm. If the height of the neck is estimated to be at least half of the height of the entire bottle, then the large bottles may have

attained a height of at least 20 cm, and nos. 13 and 14 perhaps even 30 cm or more, according to the large diameter of their rims. These bottles are usually greenish or bluish and the threads are either the same color as the vessel or a contrasting color. The glass is relatively thick.

Parallels of this subtype, and primarily of the small bottles, are apparently Barag's Types 21 and 22 which were found in sixth-century assemblages. An exact parallel to our intact bottle, in both vessel shape and decoration, is a bottle from the grave at Gush Halav, Type 15.22-1 of Barag (1970:193, 194, Pl. 41, 21, 21-1; Pl. 43, 22-1, 22), dated to the sixth century.

Additional parallels from the fifth-seventh centuries possibly occur at Sardis. Nos. 13 and 14 may resemble bottle no. 622 from Sardis, which has a short and very wide neck (von Saldern 1980:82, 83, Pl. 27, Nos. 612, 622 and discussion and parallels there).

7 L. 506 Rim diameter: 2.7 cm Base diameter: 3 cm
Height: 8.3 cm Thick glass
Bluish; threads of same color as vessel

8 L. 201 Rim diameter: 2.5 cm Thick glass
Green; brown threads

9 L. 325 Rim diameter: 3 vm
Greenish; dark green threads

10 L. 327 Rim diameter: 2.2 cm
Greenish; dark green threads

11 L. 516 Rim diameter: 2.5 cm
Bluish; threads same color as vessel

12 L. 313 Rim diameter: 3.5 cm Thick glass
Greenish; blue threads

13 L. 305 Rim diameter: 5.4 cm
Yellow; green threads

14 L. 428 Rim diameter: 6 cm
Bluish

Type 2a (2) – Smooth Bottles (Pl. VIII:5-7). About ten rim and neck fragments were found in most of the excavation areas.

This variant is characterized by a high cylindrical neck, straight or slightly flared near the simple or slightly thickened rim, a rounded body, and a base with a concave center. The vessels are bluish, greenish, and yellowish. The glass is very thin and the diameter of the rim is ca. 3 cm.

This is probably Type 15.27 of Barag (1970:196, Pl. 43, 27). Bottles of this type were found at Bethany, Kefar Dikhrin, Betzet, and Netiv Ha-Lamed He (Barag 1974:82, Fig. 2.4) and are characteristic of the time span from the mid-fifth century to the end of the Byzantine period. A similar bottle from Cyprus was published (Vessberg 1952:Pl. VII, No. 12).

5 L. 503 Rim diameter: 3.1 cm Yellowish

6 L. 516 Rim diameter: 2.9 cm Bluish

7 L. 621 Rim diameter: 3 cm Bluish

Type 2b: Pinched Neck (Pl. VIII:8-10). This subtype includes bottles with a puffy neck resulting from pinching at the junction with the body. There are three main variants: (1) undecorated neck; (2) neck decorated with horizontal threads: (3) long and narrow neck with a thick wavy horizontal thread in its center. No intact vessels were found. Type 2b is characteristic of the Syro-Palestinian region at the end of the Byzantine period.

Type 2b (1) – Smooth Pinched Neck (Pl. VIII). Some 20 fragments were found, primarily of rims and necks with the beginning of the body. This variant is characterized by a long cylindrical neck with a contraction at the junction with the body, a simple rim, and a rounded body. The contraction on bottle no. 10, at the bottom of the neck, is slightly different and the glass is thicker. The diameter of the rims ranges from 3.2 to 3.8 cm and the vessels are bluish and greenish.

This is Type 15.24 of Barag (1970:194-195, Pl. 43.24 and parallels there) and appears at Beth Shean, Shavei Zion, Netiv Ha-Lamed He (Barag 1974:84, Fig. 2.5 and parallels there), and Sardis (von Saldern 1980:70, Pl. 26, No. 478). The many published examples from Palestine and Syria indicate that these bottles are characteristic of the end of the Byzantine period.

8 L. 803 Rim diameter: 3.8 cm Bluish

9 L. 441 Rim diameter: 3.2 cm Bluish

10 L. 327 Rim diameter: 3.3 cm Bluish

Type 2b (2) – Pinched Neck Decorated with Threads (Pl. VIII:11-14). Over 10 fragments were found in most excavation areas.

This variant is characterized by a relatively low puffy or conical neck, a simple rim, a pinchmark sometimes at the junction between the body and the neck and sometimes over a wider area (as in no.

13), a slightly horizontal shoulder, and a neck decorated with thin horizontal threads, the top or bottom thread being thicker at its beginning.

Bottle no. 14 is slightly different. The rim is thickened and a single thick horizontal thread appears on the upper part of the neck. The diameter of the vessels' rims ranges from 3 to 3.5 cm. The bottles are bluish or greenish, and one is dark green.

Similar examples were found at Gerasa (Baur 1938:533, 545, Fig. 31, No. 63), but the Hammat Gader bottles have a shorter and wider neck. The bottles from Gerasa were dated by Barag (1970: 125)[20] from the end of the Byzantine period to the beginning of the Umayyad period.

11 L. 516 Rim diameter: 3.1 cm Bluish; threads of same color as vessel

12 L. 803 Rim diameter: 3.5 cm Greenish; dark green threads

13 L. 621 Rim diameter: 3 cm Bluish

14 L. 313 Rim diameter: 3.2 cm Dark green; brown thread

No. 15, which should be included in this category, differs from nos. 11-14. Only one fragment of this kind was found; it is from a large bottle, and the proportion of the neck is also different: it is long and narrow and the pinchmark is less pronounced. It either parallels bottles found at Jalame belonging to the second half of the fourth century (Weinberg 1988:70, 71, Fig. 4-32, No. 272), or a bottle found at Kursi (Barag 1983:37, Fig. 9, No. 2),[21] which is dated to the sixth and beginning of the seventh century.

15 L. 908 Rim diameter: 5 cm Greenish

Type 2b (3) – High and Narrow Pinched Neck with Wavy Thread (Pl. VIII:16, 17). Five fragments of a rim and neck with the beginning of a body were found in Loci 305, 443, and 703.

This variant is characterized by a simple rim, sometimes slightly thickened, a high and narrow cylindrical neck with a pinchmark at the junction with the rounded body. A wavy horizontal thread decorates the center of the neck, and sometimes a straight horizontal thread appears above it. The diameter of the rims ranges from 2.3 to 3 cm and the vessels are bluish or greenish. The thread is either the same color as the vessel or a contrasting color.

A complete bottle of this type was found in the "Byzantine grave" at Jericho (Sellin and Watzinger 1913:Pl. 45, III, 9), and fragments of such a neck from Khirbet Kerak (Delougaz and Haines 1960:25, Pl. 59, Nos. 27, 29) are dated to the end of the Byzantine period. Barag (1970:126)[22] attributes this type to the Umayyad period.

16 L. 305 Rim diameter: 3 cm Greenish; wavy thread of same color as vessel

17 L. 441 Rim diameter: 2.3 cm Bluish; dark blue wavy thread

Type 3: Candlestick Rim (Pl. VIII:1-4)

One complete bottle (in Locus 211) and two rim and neck fragments (in Loci 211 and 423) were found.

This type is characterized by a flattened base, a straight rounded wall, a rounded shoulder, a cylindrical neck, straight or slightly puffy in its center and slightly pinched at the junction with the shoulder, and a straight rim, beneath which a ridge was created by an upward fold.

The diameter of the rims averages 4.5 cm and the color of the vessel is greenish or bluish.

A close parallel is a bottle from Beth She'arim, Type 15.30 of Barag (1970:196, Pl. 43.30).[19]

1 L. 211 Rim diameter: 4.6 cm Base diameter: 4.1 cm Height: 8.5 cm Light greenish

2 L. 211 Rim diameter: 4.5 cm Light greenish

Variations of this type appear in fragments nos. 3 and 4. No. 3 has a tubular inward-folded candlestick rim.

3 L. 310 Rim diameter: 5.5 cm Dark green

No. 4 has a cylindrical neck and appears to be longer and wider than the other Type 3 vessels; the rim shape is also different in that there is no outward and upward fold but rather straight lines.

4 L. 101 Rim diameter: 3.6 cm Sky blue

Type 4: Rounded or Elliptical Bottles (Pl. IX:1-12)

Type 4a: Five complete bottles, dozens of rim and neck fragments as well as body parts were found in most of the excavation areas at Hammat Gader.

This subtype is characterized by an outward- and inward-folded rim, a narrow cylindrical neck, and a rounded or elliptical body. It was widespread

throughout the Umayyad period.

Barag (1983:37-38, Fig. 9-5, 6) presents parallels from Capernaum, Gerasa, the fortress of Amman, and Jericho.

1 L. 213 Rim diameter: 2.4 cm Base diameter: 3.0 cm
Height: 6.0 cm Bluish

2 L. 327 Rim diameter: 2.8 cm Base diameter: 4.0 cm
Height: 8.5 cm Bluish

3 L. 428 Rim diameter: 2.0 cm Base diameter: 3.0 cm
Height: 6.4 cm Bluish

4 L. 431 Rim diameter: 2.2 cm Base diameter: 3.6 cm
Height: 7.0 cm Bluish

5 L. 803 Rim diameter: 1.8 cm Base diameter: 3.0 cm
Height: 6 cm

Type 4b: A complete bottle was found in Locus 730.

A small bottle with a concave base, squashed globular body, and narrow cylindrical neck terminating with a flattened thickened rim was identified.

A similar bottle from Gerasa was published (Baur 1938:541, Fig. 30, No. 89) and dated to the Byzantine period. It probably belongs to the Umayyad period.

6 L. 730 Rim diameter: 2.0 cm Base diameter: 3.5 cm
Height: 5.5 cm Bluish; silver-white patina

Type 4c: Two intact bottles and some 10 fragments of a rim and neck, with slight variations, were found in Areas E, B, and G.

This subtype is characterized by a full inward-folded rim or a cylindrical tubular rim. No. 7 is narrow and high; no. 8 is short and wide, has a squashed rounded body, and a concave base. This subtype was widespread in the sixth and early seventh century.

7 L. 700 Rim diameter: 1.8 cm Base diameter: 2.6 cm
Height: 6.4 cm Bluish

8 L. 703 Rim diameter: 2.4 cm Base diameter: 3.0 cm
Height: 5.8 cm Bluish

9 L. 516 Rim diameter: 2.4 cm Bluish

Type 4d: One intact bottle was found in Area E (the southwestern bathtub near the statue) as well as two small rimless bottles in Locus 327. This subtype is characterized by a slightly squashed rounded body, a cylindrical neck, and decoration on the widest point of the body.

No. 10 has a neck flaring up to a simple everted rim; the body is decorated with a zigzag thread apparently of the same color as the vessel but completely covered with a thick black patina.

Bottle no. 11 is rimless. Its body of bluish glass is decorated with a red-brown chain pattern. No. 12 is also rimless and the middle of its body is decorated with a row of horizontal pinchmarks.

10 L. 618 Rim diameter: 1.5 cm Base diameter: 3 cm
Height: 5 cm
Dark, completely covered with a black patina

11 L. 327 Base diameter: 2 cm
Bluish; red-brown decoration

12 L. 327 Base diameter: 2.5 cm
Bluish

Bottles with an Angular Body

Type 5 (Pl. IX:13)

A complete vessel was discovered in Locus 506 together with four inward-folded funnel-shaped rim fragments that perhaps belong to this type; however, it is possible that their body is rounded or has some other shape.

This type is characterized by a flattened bottom, concave in the center and thicker than the wall, a sloping body, angular shoulder, and neck pinched at the junction with the shoulder. flaring toward the everted, inward-folded tubular rim. The vessels are not decorated and the diameter of the rims ranges from 5 to 6 cm. This is apparently Type 17.2 of Barag (1970:204, 205, Pl. 45.2),[23] for which he presents examples from the Mount of Olives, Samaria, and Nablus. The bottle from Nablus, which was found intact, appears to resemble our bottle, but its neck is longer and narrower (Abel 1922:Pl. IV, 2.7). A similar bottle was found at Karanis (Harden 1936:Pl. XXVII, No. 531), but it has depressions on its body.

13 L. 506 Rim diameter: 5.5 cm Base diameter: 5.5 cm
Height: 9.2 cm Greenish

Bottles with Piriform Body

Type 6 (Pl. IX:14)

A complete small bottle was found in Locus 441 as

well as a few small body and base fragments. This type is characterized by a concave bottom, a concave wall creating a piriform body, a narrow and high cylindrical neck, a simple or slightly inverted, rounded rim, and a slight indentation at the junction between the neck and the body.

No exact parallel was found for bottle no. 14, but its upper part, i.e., the cylindrical neck with a pinchmark at its bottom, and the simple rim belong to Type 15.6 of Barag (1970:189, Pl. 41.6) that was widespread in the fourth century both in the East and the West. However, none of the many parallels presents a piriform body.

14	L. 441	Rim diameter: 2.4 cm	Body diameter: 3.5 cm
	Height: 9.7 cm		Light green

Mold-blown Bottles

Type 7 (Pl. IX:15-20)

Seven bases with the body or part of it were found in Loci 211, 305, 325, 327, 506, and 516. These fragments are characterized by a flattened or concave bottom, a rounded body, and vertical or radial ribbing from the bottom past the neck. Fragment no. 20 has vertical radial ribbing and above it diagonal ribbing creating a checkerboard effect. The diameter of the bases ranges from 3 to 6 cm, and these bottles are greenish and bluish. Vessel no. 15 could belong to the Jar family if the neck terminates in the area of the break, and then it would possibly resemble Type 6.7-3 of Barag (1970:151, Pl. 34.7-3;[24] however, it possibly belongs to the bottle group having a long cylindrical neck with a pinched bottom, like Barag's Type 15.29.

Since the other fragments are body and bottom fragments, it is difficult to assign them to any specific group. Fragment no. 21 is from a large bottle with a piriform body; the upper part of the neck and rim is missing. The base is flattened and concave in the center, and vertical sides appear on the piriform body. Perhaps this parallels Type 17.13-2 of Barag (1970: 202, Pl. 44.13-2); however, our neck is longer in proportion to the body and Barag's type lacks vertical sides. Barag's examples from Khirbet Kerak are dated to the late Byzantine to early Arab periods.

15	L. 506	Base diameter: 4.1 cm	Greenish
16	L. 516/7	Base diameter: 4.0 cm	Greenish
17	L. 211/12	Base diameter: 3.4 cm	Greenish
18	327/23	Base diameter: 3.7 cm	Bluish
19	325/6	Base diameter: 3.5 cm	Greenish
20	L. 305/13	Base diameter: 4.8 cm	Greenish
21	L. 506/1	Base diameter: 6.0 cm	Greenish with bubbles

NOTES

1. Although they are considered drinking vessels, he notes that they could be lamps (von Saldern 1980:53, n. 46).
2. Found in early Byzantine contexts in shops beneath the synagogue and in the atrium of the synagogue, from the fifth-sixth centuries and later.
3. This is the picture obtained from the goblets found in the 1982-1983 excavations at Gerasa.
4. He notes there that base stems were found at many sites, but there is no way of knowing anything about the shape of the body.
5. According to Weinberg's description and the experiments conducted by him, the vessels were slightly blown with a blow pipe and decorated with a horizontal rotary decoration: the blue blobs were blown into a conical mold, cooled, decorated with horizontal incisions, and finally the mold was removed by a torch or by a string that was lit at the point where the rim was cracked-off and filed.
6. The church was dedicated in the days of Justinian in 563 C.E. Glass lamps were held in silver rings suspended from metal chains.
7. The vessel is larger than ours; it is 9.5 cm high and the rim diameter is 12.3 cm.
8. The vessel shape is similar to ours, but the decoration has only three blue blobs on its lower third and groups of horizontal incisions near the rim and in the middle.
9. No. 476 is more reminiscent of the shape of the vessel, but the arrangement of the blue blobs is different. They form a horizontal row, with a single blob at the bottom. No. 380 has an identical arrangement of blobs.
10. No. B285-3086/1, as yet unpublished.
11. Thirty-seven rim fragments were found. Weinberg identifies the type only by rim fragments since bases may belong to other vessels. Because of the small quantity, the excavators are not certain if this is a product of Jalame; see parallels there.
12. Weinberg presents parallels of the many complete cups of the type having vertical indentations from Cyprus, primarily from the third and fourth

centuries; see Weinberg 1988:note 97. The fragment from Jalame apparently belongs to the glassworks, i.e., the end of the fourth to the beginning of the fifth century. Like our vessel, it has no pontil mark and it is unclear whether the continuation of the body resembles the type with vertical indentations or our type.

13. He presents a parallel of a vessel fragment from Dura Europos.
14. No complete large bottles were preserved, but from the rim or base diameter, and the height of the neck and body fragments, it is possible to estimate their height.
15. The example presented by Barag comes from Samaria and dates from the end of the third to the beginning of the fourth century.
16. His example from the Mount of Olives dates from the end of the fourth to the beginning of the fifth century, that from Kefar Dikhrin is dated to the fifth century, and the remaining examples from Gerasa, Khirbet Kerak, and Shavei Zion are dated to the end of the Byzantine period.
17. Bottle no. 50 from Hanita resembles our no. VIII:11 in its decoration, but its neck is longer and its rim is not folded like ours. Bottle no. 51 from Hanita resembles our no. 14.
18. No. 351 from Jalame parallels our decorated bottle no. VIII:11.
19. The rim and the body resemble our bottles, but our neck is very short in comparison to that of the bottle from Beth She'arim. Barag dates it to the second half of the third century or the first half of the fourth century, and links it to the bottles with a piriform body (his Types 10, 11, 16), since they appear together at Beth She'arim.
20. The shape of the neck of bottle no. 9 is slightly reminiscent of Barag's Type 15.29-1, but our neck is lower.
21. Barag claims there that this is a type characteristic of Golan and northern Transjordan glassware from the sixth and early seventh centuries.
22. In his discussion of glass vessels from Gerasa, he presents parallels of the "lateness" of the type from the synagogue in Jericho that was destroyed in the Umayyad period.
23. Barag dates it on the basis of the bottle from the Mount of Olives that was discovered in the grave used from the end of the third century to the first half of the fourth century.
24. The jar from Emesa presented by Barag apparently belongs to the Late Roman period.

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CHAPTER 11

ISLAMIC GLASS FINDS

Ayala Lester

VESSEL STAMPS*

Five small vessel stamps were among the finds from Hammat Gader. Four of them have traces of rims; the fifth has a reconstructed rim and part of the neck. The round vessel stamps have an average diameter of 2 cm and are made of pale green, brown and deep turquoise glass. Four of the vessel stamps were found in Loci 803 and 805 of Area H, on the floor of the entrance corridor. The fifth, from Area G (Locus 713) was found on the path leading to the spring. The vessel stamps were revealed below the debris resulting from the 749 C.E. earthquake. Thus, it can be assumed that they were in use until the destruction of the site.

All five pieces bear devout phrases; four feature the expression "alwafà lillah" (Honesty to God), and the fifth, "Bismillah" (In the Name of God).

Vessel stamps and other weights such as ring weights or disk weights appear in pairs and bear information about the issuing official, the capacity, weight or commodity (e.g., seeds or liquids) involved, occasionally the date, and devout phrases (Miles 1960:384). Only single stamps – each belonging to a different pair of glass weights – were found at Hammat Gader, and this narrows the possibilities of drawing concrete conclusions.

Miles (1960:384) suggested that vessel stamps were used for labeling pharmaceutical containers and measuring cups for liquids, semi-liquids, various substances and seeds which were all part of the Arab pharmacopoeia. Balog (1976:29) reaffirmed this thesis that the vessels were for substances used in the everyday medical practice of the eighth and ninth centuries.

Morton (1985:33-35) rejected Miles "pharmaceutical theory" and views the employment of weights and measures as evidence of a market economy. He suggests that the use of commodity stamps reflects an official attempt to impose central control of weights within the retail trade.

The subject of legal standards and weights is alluded to in several chapters of the Quran: "Give just measure and be not among the defrauders" (7:83 and 83:1-3) and "Diminish not unto men any of their possessions" (26:181, 183; and Miles 1960: 387). In the expanded version of this phrase, "amara lahu bil-wafà," Allah commands the fulfillment of promises. The root "wfy" has been interpreted to apply to the legal standard determining measures or full measures (Miles 1960:187-188, 189-190). Morton expanded upon this interpretation and explains the phrase as relating to the official issuing of the vessels.

Glidden (1959:352) was the first to offer a translation more appropriate to the context of measures and weights. He suggested the term "full measure" be used for "al-wafà lillah," and this was accepted by Miles (1963a:nos. 23c, 75-76). Balog (1976:nos. 34, 36) ascertained that there is a duplication of variations of the root "wfy" on vessel stamps, disk weights, etc. Thus, on the principal stamp, he translated the word "wafiah" or "waf" as "full measure" and the term "al-wafà lillah" was correlated with its religious connotation "Honesty to Allah."

Morton (1985:37-38) discerned that the group of "al-wafà lillah" stamps, bearing the finance director's name and the denomination on the principal impression, was identical to a group with the executive's name on the secondary stamp. Thus

* I wish to thank Mr. A. Berman of the Israel Antiquities Authority for his assistance in reading the inscriptions on the vessel stamps, and Mr. Z. Shaham of the Eretz Israel Museum for providing me with material about Roman baths and bathing.

he suggested that "al-wafà lillah" stamps represent the executive or prefect at a stage when it was required that weights and measures be certified by one or more officials, and that these stamps represent the first use of executives' names. Morton thus appears to accept a religious significance for this phrase, but he also embraces the interpretation that these weights had an official use. The phrase "al-wafà lillah," which is impressed on the vessel stamps, first appeared on a group of coins attributed to Damascus and dated to about 680 C.E. (Milstein 1988-9:3-15).

"Al-wafà lillah" was first employed in the time of Usama b. Zayd, finance director (A.H. 96-99/ 714-717 C.E.), and continued in use until the first years of al-Qasim b. Ubaydallah, finance director (A.H. 116-124/734-742 C.E.) (Morton 1985:38-9). The first executive to have his own stamps was Yazid b. Abi Yazid (A.H. 116-117/734-735 C.E.). Stamps bearing both names of officials and vessel capacities ceased to appear prior to A.H. 171/ 786-787 C.E. During the Abbasid period and under the Tulunids, only stamps bearing executives' names survived (Balog 1976:29).

A final point for discussion is the presence of vessel stamps at Hammat Gader. During the early Umayyad period, a series of qist stamps was issued for olive oil vessels. The issuing of these stamps ceased in the first years of the reign of al-Qasim b. Ubaydallah (A.H. 116-24/734-742 C.E.). Morton (1987:32-33) holds that there was no need to indicate a special qist stamp for olive oil, as the term "qist" was a general reference measure for olive oil and was most likely universally known.

The use of olive oil in baths probably continued from the Roman period, as the Roman tradition of baths and bathing was adopted by Islam (Yegül 1992:341-349). Two illustrations have been published showing utensils for Roman bathing which contain ampullae and flasks for perfumes and oils used to oil the body (Heinz 1983:Fig. 151; Yegül 1992:Fig. 33). Several bronze vessels found at Thrace and Moesia were probably also used to hold oils (Nenova-Merdjanova 1992).

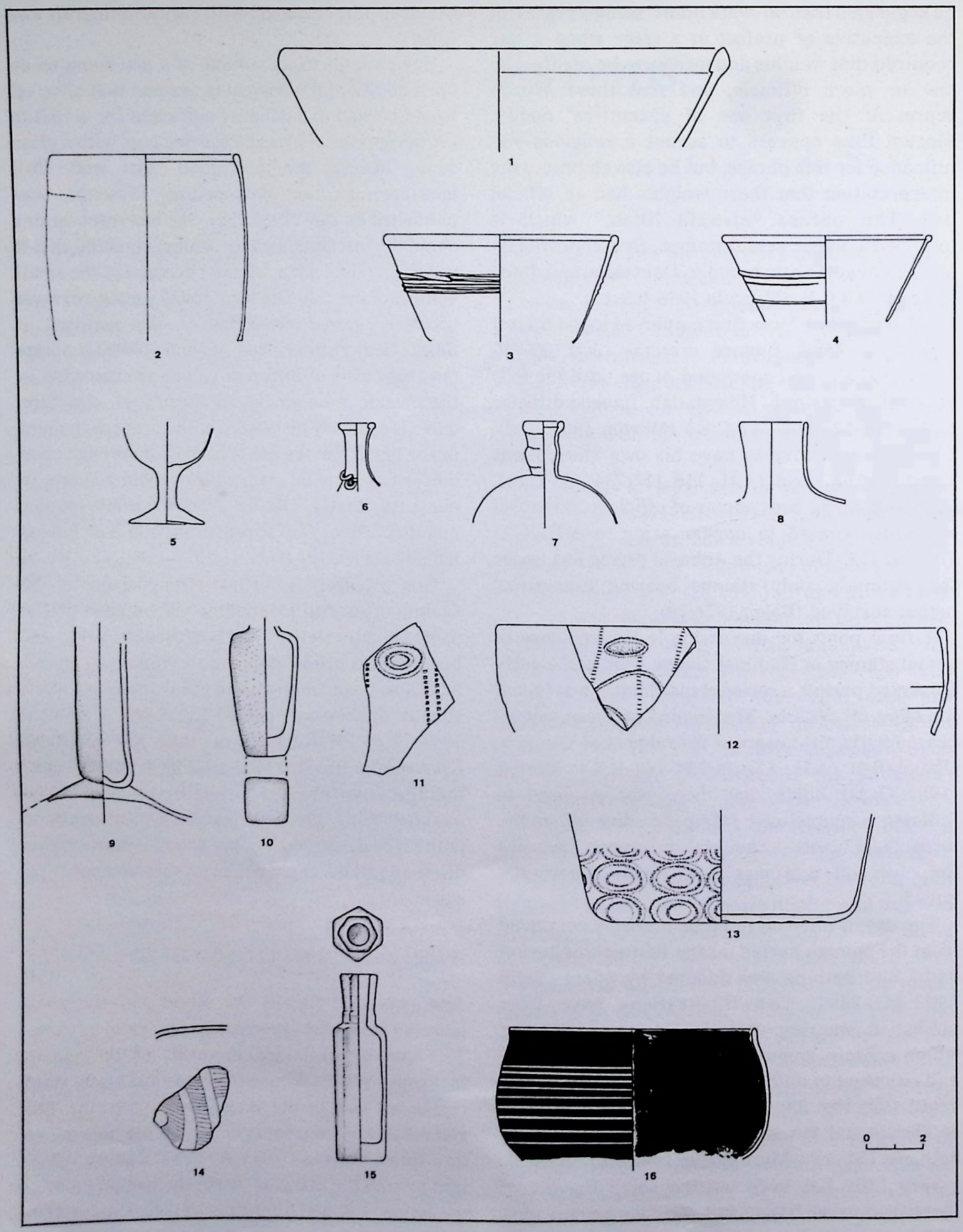
Very little has been written about the use of thermo-mineral baths, but we can assume that oils were applied in the same way to protect the skin from direct contact with various minerals and salts.

However, the exact volume of a qist remains an open question. It is logical to assume that olive oil would be sold in a quantity sufficient for a visit to the hot springs. A glass measuring cup, with a glass stamp bearing the inscription "qist waf" (full measure), in the Metropolitan Museum, was published by Day (1953:292). She has reservations about the inscription on the stamp, claiming that it was faulty (and not a full qist) because of the small volume of the cup. The term "qist" (measure) most probably varied according to the material it designated. Furthermore, Morton (1985:32) points out that "qists of different values are recorded in the Arabic meteorological literature" and "the various ordinary qists were of the order of the pint or the litre." But the use of a small quantity of olive oil for cosmetic or medical use would require, in our case, that a qist be a considerably smaller quantity. Thus, Day's measuring cup was indeed labeled correctly.

This proposal is further strengthened by the finding of several identically-shaped glass bottles at Hammat Gader (Pl. 1). Body sherds, necks and bases of this group, dated to the Umayyad period, have also been found during excavations at several sites in the region, such as Kh. Karak (Delougaz 1960: Pl. 59:24), Kursi (Barag 1983: Fig. 9:5-6) and Kfar Nahum (Bagatti 1963-64: Fig. 4:5,6). I suggest that this group of glass bottles served for personal use after being filled with oil from a measuring cup of the type described by Day, and the glass weights discussed above might belong to similar measuring cups.

A Note on the Manufacture of the Glass Stamps

All five vessel stamps are round with distorted margins and have protrusions on their reverse. This can be explained in terms of the manufacturing process. A gob of molten glass was poured on the hot wall of the vessel, below the rim. The glass disk was then stamped with a die bearing an inscription (Morton 1985:31). The stamp cooled, first around the margins, while the hottest point at the center still had a tendency to ooze and gather into a bulge-shaped protrusion.



Pl. I. The Islamic glass.

1. L. 803 (IAA No. 94-2137). Fig. 1.

A round vessel stamp of deep turquoise glass, attached to a looped rim folded inward and down. Rim of colorless glass with greenish tinge. In addition to the inscription, there are marks of the molten glass flow.
Max. diam.: 2 cm.

Inscription.	Arabic:	Translation:
	الو	Hon-
	فا لله	esty to God

The word *al-wafà* is split into two lines. The letter Fa is blended into the margins due to glass leakage. There is a crescent at the bottom of the stamp.

Parallel stamps: Balog 1976:nos. 34, 36; Launois 1957:nos. 256-259 (but without the crescent at the bottom); Miles 1948:nos. 189-190; 1958:nos. 275-276 277-278 (but without the crescent at the bottom); 1963:no. 3; 1971:no. 5; Morton 1985:nos. 502-504; Petrie 1926:nos. 227-228.



Fig. 1. Vessel stamp. End of seventh to beginning of eighth century.

2. L. 803 (IAA No. 94-2138). Fig. 2.

A round vessel stamp attached to a looped rim folded inward and down. Vessel stamp and rim of pale green glass. The stamp has a reddish-brown streak that was probably formed within the molten gob.
The impression was stamped upside-down.
Max. diam.: 2.2 cm.



Fig. 2. Vessel stamp. End of seventh to beginning of eighth century.

Inscription.	Arabic:	Translation:
	بسم (?)	In the name of (?)
	لله الو	God Hon-
	فا لله	esty to God

The word *al-wafà* is split in the second and third lines. No similar inscriptions have been found, but this devout formula appears as an opening for inscriptions which comprise denomination, commodity, name of ruler.

Parallel stamps: Lane-Poole 1891:nos. 4, 6, 391, first two lines of a bottle stamp; Launois 1957:258, 302, no. 3; Miles 1948:no. 28, a glass weight of one-half dinar; 1951:nos. 10-11, vessel stamps of qist and one-quarter qist; 1958:no. 51, a coin weight; no. 92, a vessel stamp; 1963:no. 25, a vessel stamp.

3. L. 803 (IAA No. 94-2139). Fig. 3.

A round vessel stamp of deep turquoise glass attached to a colorless rim, looped inward. This stamp was obliquely struck and the flow of the glass gob deformed the inscription.
Max. diam.: 1.9 cm.

Inscription.	Arabic:	Translation:
	بسم الله	In the name of God
	امر الله	Commanded God (?)
	الوفا	Honesty

The word *bi l-wafà* is inverted and fused with the lower edge such that only the upper part is distinguishable. For the discussion and parallels, see no. 2.



Fig. 3. Vessel stamp. End of seventh to beginning of eighth century.

4. L. 713 (IAA No. 94-2140). Fig. 4.

Oval-shaped vessel stamp of brown glass attached to a loop-shaped colorless rim with a greenish tinge. Vessel stamp is obliquely attached to the rim. Due to leakage the inscription is unclear.
Max. diam.: 2.3 cm.

Inscription.	Arabic:	Translation:
	اله ا	To God Hon-
	لوفا	esty

The inscription should read "Honesty to God," and it seems that the order of the text was inverted.



Fig. 4. Vessel stamp. End of seventh to beginning of eighth century.

5. L. 805 (IAA No. 94-2141). Fig. 5.

Vessel stamp attached diagonally to the rim and neck of a vessel. Light greenish glass. The stamp was partly deformed during cooling and the inscription is distorted.
Diam. of rim: 6 cm.
Diam. of vessel stamp: 1.8 cm

Inscription.	Arabic:	Translation:
	بسم	In the name of
	الله	God

Parallel stamps: Launois 1969:no. 25 (a fragment); Miles 1948:nos. 211-212 (two weights lacking standards, thus they are probably amulets).

LATER ISLAMIC GLASS FINDS

The 16 fragments of Islamic glass range from the Umayyad to the Mamluk periods. The Umayyad material is typified by its greenish-blue glass, continuing a Roman-Byzantine tradition. The Umayyad vessels were probably locally produced.

Sherd no. 2 (Pl. I:2), part of a deep bowl with incurving rim, is the prototype of a group of deep bowls of thick glass having slanting, incurving rims, which were common toward the end of the Umayyad period and during the Abbasid era. The Abbasid glass is thicker and has a wide range of colors from green and yellow to purple.

Sherd no. 9 (Pl. I:9) (IAA No. 94-2144), a bowl-shaped stemmed lamp, is of local origin. This type of lamp dates back to the end of the Byzantine period (Meyer 1987: Fig. 10:O,Q) and continues into the Islamic period. Such a lamp, from an Umayyad level, was discovered at Jerash (Meyer 1987:205). The type continued to be used during the Abbasid period (Lane 1937:10:v; and unpublished material from Tiberias) and until the early 20th century (Crowfoot and Harden 1931:206-207).

Flask no. 10 (Pl. I:10) was first blown into a mold and then further processed by means of free blowing. In spite of this, its four-sided flat contour, with an arch-shaped termination, was preserved.

Sherd no. 13 (IAA No. 94-2143), the base and wall of a molded bowl decorated with rows of ovals on its walls and concentric circles on the base. Mold-blown vessels were popular during the Abbasid period and found in various Islamic centers and settlements such as Fustat (Scanlon 1967: Fig. 4a-b), Quseir al-Qadim (Whitcomb 1983: Fig. 3), Aqaba (Whitcomb 1988:23), Heshbon

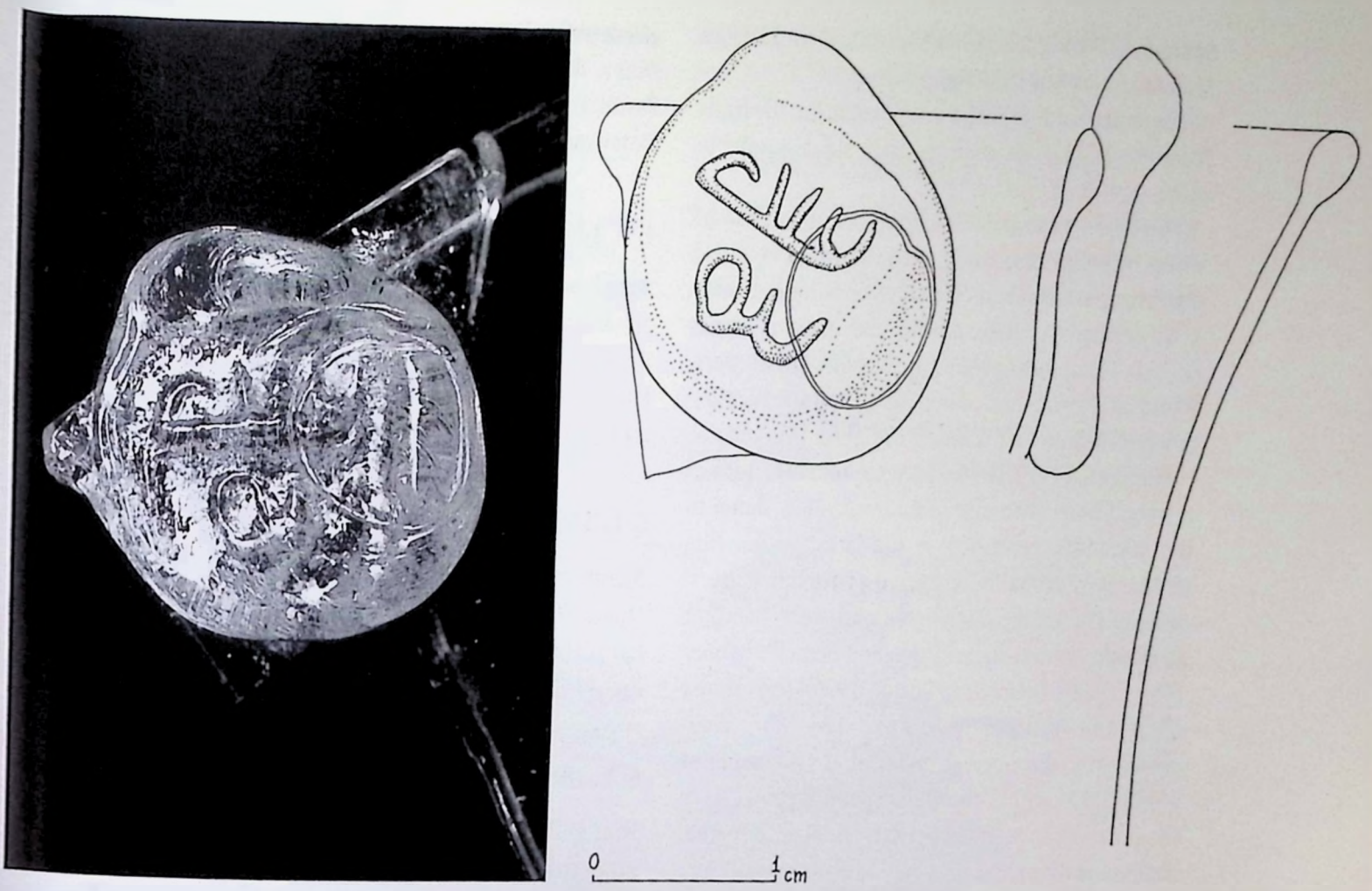


Fig. 5. Vessel stamp. End of seventh to beginning of eighth century.

(Goldstein 1976:Pl. 12b), Tel Ana' (Bamber 1988: Fig. 52:28).

Sherds nos. 11 and 12 (IAA Nos. 94-2145, 94-2148), a blue cup(?) and yellow bowl, have pincered decoration. Lane (1937:68-71), who discussed the technique, suggested the use of a "tong-like instrument." The tongs had teaspoon-shaped extremities with engraved designs which, when pressed, stamped the design on both edges of the vessel. Continuous rotation of the vessel during blowing caused the circles to be deformed into ovals.

In many cases, almost all the elements appear together: ovals, vertical rows of hatching, lozenges and zigzag lines. In others a single element repeats itself.

Small quantities of vessels with pincered decoration have been found in Samarra (Lamm 1928:Tafel IV;168, Tafel VI:231), Seleucia (Negro Ponzi 1970-71:Fig. 143, no. 163), Fustat (Scanlon 1974:Fig. 4), Aqaba (Whitcomb 1988:23), al-Mina (Lane 1937:68-71 and Fig. 11), dated to the ninth-tenth centuries.

Sherd no. 14 (IAA No. 94-2146), the wall of a blue cup, and the intact perfume bottle (no. 15) are both of cut glass. Sherd no. 14 represents a small group of vessels in yellow, blue and purple glass decorated with shallow incisions on the surface. The decoration consists of vertical and horizontal bands accommodating floral and geometric patterns and Kufic or pseudo-Kufic letters (?). Most finds are fragments and only a few complete vessels are exhibited in museum collections.

A blue glass plate was found at Nishapur (Hauser and Wilkinson 1942:Fig. 33); a few sherds were uncovered at Samarra (Lamm 1929:Pl. VIII). Sherds of a blue bowl, a nearly complete yellow glass cup and another sherd of colorless glass were found at Rakka (Al-Ush 1971:200-203); a sherd of amber glass from al-Mina (Lane 1937:Fig. 12b); two sherds of a small cup from Tiberias (Lester 1997); sherds from Fustat (Lamm 1929:Pls. 50, 51;

Scanlon 1974:Fig. 5b; 1984:Fig. 58); a sherd from Manda (Morrison 1984:Fig. 131e).

The source of this group is unknown, but the finds from Syria and its vicinity indicate a probable ninth-century Syrian origin.

The intact hexagonal, facetted perfume flask of white translucent glass (no. 15, IAA No. 94-2144) was brought from Iran. Its facet-carving indicates a Sassanian heritage within the Early Islamic period. Three hexagonal-cut perfume flasks were found at Fustat and dated to the ninth century (Pinder-Wilson and Scanlon 1987:Fig. 13).

Sherd no. 16 (Pl. II:16) (IAA No. 94-2147), part of a ribbed bowl with marvered decoration, dated to the 13th-14th centuries, is the latest within this group. It is probably of Syrian provenance. Such vessels are widely distributed and were found at al-Qadim on the shore of the Red Sea (Whitcomb 1983:Fig. 2), Yoqneam (Lester 1996) and Hama (Riis and Poulsen 1957:Figs. 186-188). Geographically, the nearest material is fragments of bowls found within the Beth Shean fortress from the Crusader to Mamluk periods (A. Boas, personal communication).

1. L. 500. Pl. I:1.

Round, thickened and flattened, incurving rim fragment. Greenish-blue glass. Tiny bubbles. Silvery weathering.
Diam.: 16 cm.
Parallel glass: Meyer 1992:Fig. 18:498.

2. L. 106. Pl. I:2.

Rim fragment of a cup. Outsplayed rim curving inward. Trail of same color, of varying width, wound around.
Diam.: 7.3 cm.
Parallel glass: Al-Asa'd and Stepnioswki 1989:Fig. 8:6, for a parallel rim (Umayyad); Meyer 1987:Fig. 16:410 (Islamic).

3. L. 106. Pl. I:3.

Fragment of neck and rim. Conical neck with round splayed rim curving inward. Brown trail of varying width wound in five turns, starting near top. Light green glass. Bubbles.
Diam.: 8.6 cm.
Parallel glass: Meyer 1987:Fig. 9:O-S (probably Umayyad).

4. L. 106. Pl. I:4.

Sherd of bowl with incurving rim. Light green glass. Bubbles.
Diam.: 7 cm.
Parallel glass: Al-Asa'd and Stepnioswki 1989: Fig. 8:11 (Umayyad). Meyer 1987:Fig. 13:E (Umayyad).

5. L. 106. Pl. I:5.

Stemmed goblet with flat foot. Light green glass.
Diam. of base: 2.7 cm.
Parallel glass: Lamm 1929:Tafel 3: 18; Meyer 1987: Fig. 11:2 (Umayyad).

6. L. 106. Pl. I:6.

Rim and neck of small vial. Asymmetrical flaring rim folded inward. Short cylindrical neck decorated with a trail of the same color wound freely around and forming a loop. Light olive green glass.
Parallel glass: Brisch 1965:174, Abb. 46 (eighth century, without trail); Meyer 1987:Fig. 12:N (Umayyad; without trail); Meyer 1992:Fig. 17:453.

7. L. 106. Pl. I:7.

Upper part of a flask with spherical body. Neck slightly constricted at base and near rim. Rim folded inward and down.
Diam. of neck: 12 cm.
Parallel glass: Kubiak and Scanlon 1980:Fig. 9:e (eighth-ninth centuries).

8. L. 106. Pl. I:8.

Wide, short, slightly splayed neck with traces of slanting shoulder. Round asymmetrical rim.
Pale green glass. Pitted.
Diam of neck: 2.5 cm.
Parallel glass: Brisch 1965:Abb. 40 (eighth century); Kruger 1984: no. 6 (Egypt, eighth-ninth

centuries); Lane 1937:Fig. 10:V (ninth-tenth centuries).

9. L. 900. Pl. I:9 (IAA No. 94-2142).

Tube-shaped receptacle attached to a concave base. Part of a bowl-shaped lamp. Thick transparent bluish-green glass with white and silvery weathering.
Parallel glass: Crowfoot and Harden 1931:Pl. XXX:52; Lamm 1928:38, Abb. 27, nos. 148-149; Lamm 1929:Tafel 4: 39; Lane 1937:Fig. 10:v (ninth-tenth centuries); Meyer 1987, Fig. 10:O, Q.

10. L. 511. Pl. I:10 (IAA No. 94-2143).

Mold-blown flask. Square in section with flat base. Funnel-shaped neck. Transparent green glass with white milky weathering. Each side with an arch-shaped termination. Flat base with traces of pontil mark.
Height: 5 cm.
Parallel glass: Kruger 1984:no. 26 (Egypt, ninth-tenth centuries); Lamm 1928:Tafel II:79 (ninth century); Lane 1937:Fig.12:H, but without molded decoration (ninth-tenth centuries); Pinder-Wilson and Scanlon 1987:Fig. 5 (eighth or ninth century).

11. L. 106. Pl. I:11 (IAA No. 94-2145).

Sherd, slightly convex with pincered decoration. Light blue glass. Small bubbles. Decoration consists of concentric ovals between two vertical rows of tiny hatchings.
Parallel glass: Lamm 1929: Tafel 47: 1, 2, 6 (mainly from Egypt); Pinder-Wilson and Scanlon 1987:no. 11, (ninth-tenth centuries); Scanlon 1974:Fig. 4a-d (ninth century).

12. L. 106. Pl. I:12 (IAA No. 94-2148).

Sherd of a shallow bowl with rounded rim, slightly convex wall and pincered decoration. Colorless glass with yellowish tinge. Decoration consists of three vertical rows of small hatchings with ovals and alternating zigzag lines.
Parallel glass: Lamm 1929:Tafel 17: 2, 6 10; Pinder-Wilson and Scanlon 1987:Fig. 10 (ninth century); Scanlon 1974:Fig. 4a-d (ninth century).

13. L. 106. Pl. I:13 (IAA No. 94-2162/1).

Bowl. Slightly convex wall fragments with flat base and molded decoration. Walls decorated with an interlace of concentric ovals. Base with concentric circles around pontil mark. Yellowish glass with many tiny bubbles.
Diam. of base: 8 cm.
Parallel glass: Pinder-Wilson 1991:no. 149 (Egypt, ninth-tenth centuries); Whitcomb 1988:23.

14. L. 106. Pl. I:14 (IAA No. 94-2146).

Slightly convex fragment decorated with shallow scratching of Kufic letters (?) filled with slanting parallel lines. Transparent dark blue glass.
Parallel glass: Al-Ush 1971:200-203; Kruger 1974: no. 146 (Iran, probably from Khorasan, ninth-tenth centuries); Lamm 1928:79 and nos. 251-259; Lamm 1929: Tafel 50, 51; Lane 1937:Fig. 12:6 (ninth-tenth centuries); Scanlon 1974:Fig. 4b (ninth century); Scanlon 1984:Fig. 58 (ninth century).

15. L. 210. Pl. I:15 (IAA No. 94-2144).

Flask with hexagonal body. Flat base. Funnel-shaped facetted neck. Covered with white spotted weathering.
Height: 6.7 cm.
Diam. of base: 1.8 cm.
Iran, 9th-11th centuries.
Parallel glass: Kruger 1984:no. 173 (Iran, ninth-tenth centuries); Lamm 1928:Tafel III:93 (ninth century); Lamm 1929:Tafel 58:6; Lane 1938: Fig. 12:6 (ninth-tenth centuries); Pinder-Wilson and Scanlon 1987:no. 13 (ninth century).

16. L. 208. Pl. II:16 (IAA No. 94-2147).

Rim fragment of ribbed bowl with marvered decoration. Purple glass. Bubbles. White marvered threads embedded in slightly thickening rim and around the bowl.
Diam.: 9 cm.
Syria, 13th-14th centuries.

Parallel glass: Meyer 1992:Pl. 19:543 (13th-14th centuries); von Saldern 1974:nos. 339-340 (Near East, 9th-11th centuries); Smith, 1957:no. 510 (Syria, 11th-12th centuries); Whitcomb 1983:Fig. 2b (13th-14th centuries); Riis and Poulsen 1957: nos. 186-188.

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CHAPTER 12

MARBLE DECORATIONS, WALL MOSAICS AND SMALL FINDS

Tania Coen Uzzielli

The splendor of the Hammat Gader baths was enhanced by the various decorations which embellished the building. Fragments of these decorations are described in this chapter, including the marble masks that adorned the fountains around the large pool in Area D, fragments of mosaic walls, and fragments of marble reliefs which probably belonged to the site's later phase, when the baths ceased to be used. The small finds, including gold jewelry, are described at the end of the chapter.

MARBLE MASKS

Of the five pools in the Hammat Gader baths complex, the most impressive one was the large pool in Area D. This is a long, rectangular pool, with narrower wings on the north and south, decorated around its perimeter with 28 fountains. The fountains, identical in form and of varying sizes, are rectangular, altar-shaped blocks, with molded bases and tops adorned on the side facing the pool with human and animals heads, from whose open mouths cool water spouted into the pool.

Most of the fountains were badly damaged by iconoclastic activity; only fragments of reliefs remain. Some of the human faces that decorated the fountains were recovered beneath the debris of the entrance corridor (Area H). It seems that the heads were buried together after they were mutilated by hammer and chisel. (The excavators believe the heads were stored on shelves and were buried during the destruction of the baths by the earthquake of 749 C.E.)

Some of the blocks discovered *in situ* bore the remains of a sculpted mane, most probably that of a lion or some other feline (Fig. 1). The four sculpted human heads found on the pavement of the entrance corridor are very poorly preserved due to the damage caused by iconoclastic activity and possibly corrosion by water, thus making it difficult to identify the different types of iconography and to determine a precise date on the basis of stylistic features.

The following catalogue provides a description of each find and, when possible, an iconographic identification and stylistic analysis.

Cat. no. 1. Fragment of a long and oval sculpted face, seriously damaged and mutilated in its upper left part (Fig. 2). The nose is missing. The almond-shaped eyes have a deeply cut contour with a round, deeply drilled pupil in the center. The mouth is wide, almost rectangular, and its contours are deeply drilled. Remains of dotted circles appear above the forehead, suggesting that this was the beginning of an *onkos*, a high and curly, now corroded, coiffure. Remains of a thin beard are visible on the edge of the right cheek.

The face seems to resemble a tragic mask characterized by wide open eyes, deep contours of the face's outline, a gaping mouth, and high *onkos*. These features lend the mask a frightened expression, which is typical, according to Bieber (1961:243), of tragic masks in the late Roman empire.

Cat. no. 2. Fragment of a long, oval face of a balding and bearded elderly male (Fig. 3). Its lower part and entire surface are seriously damaged. The almond-shaped eyes are bordered by a low ridge; the large, round pupil is represented by a drilled hole. The hair on the temples is thick, as are the remains of the beard. Only the upper part of the



Fig. 1. Fountains decorated with animal heads.

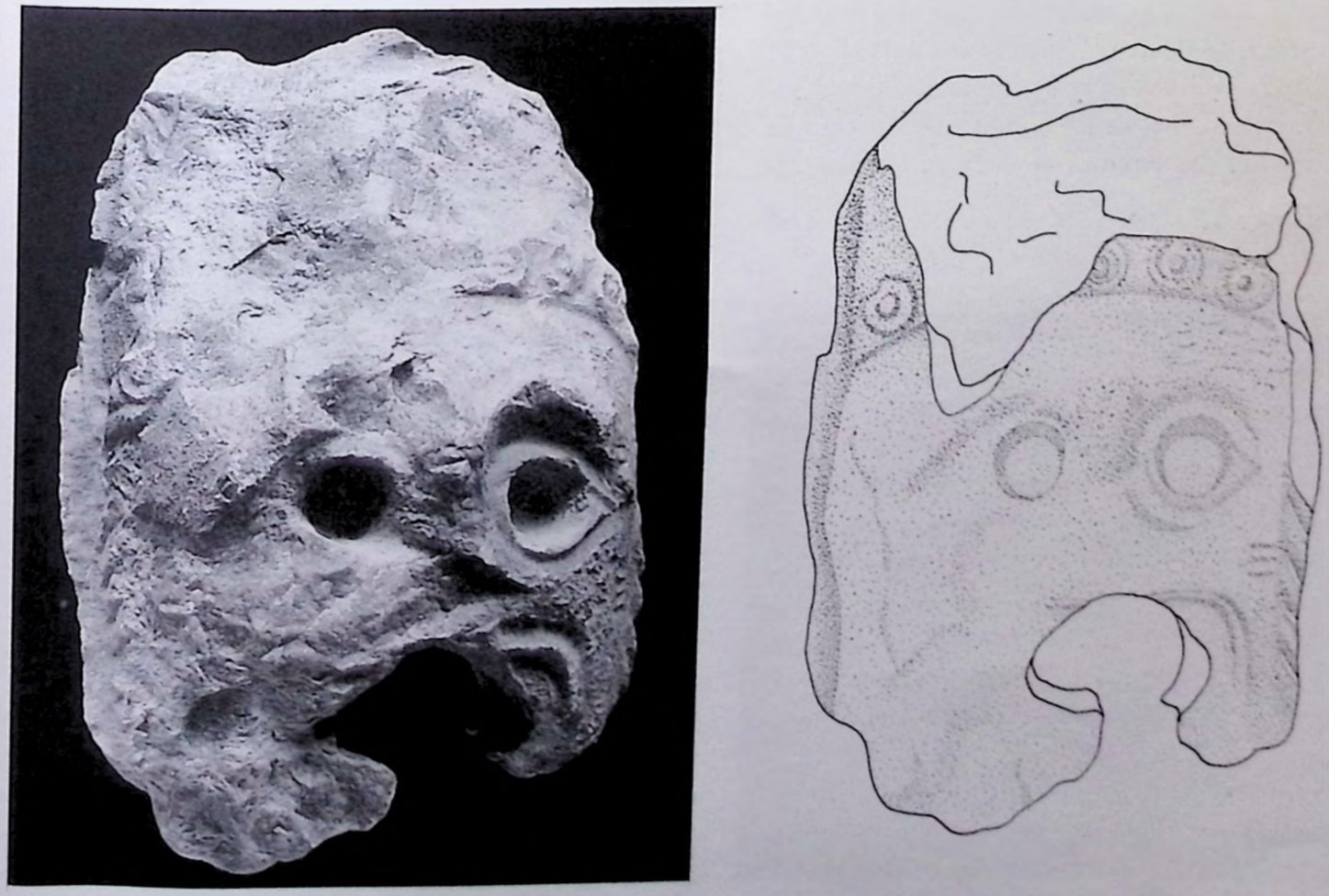


Fig. 2. Tragic mask. Fragment of a fountain.

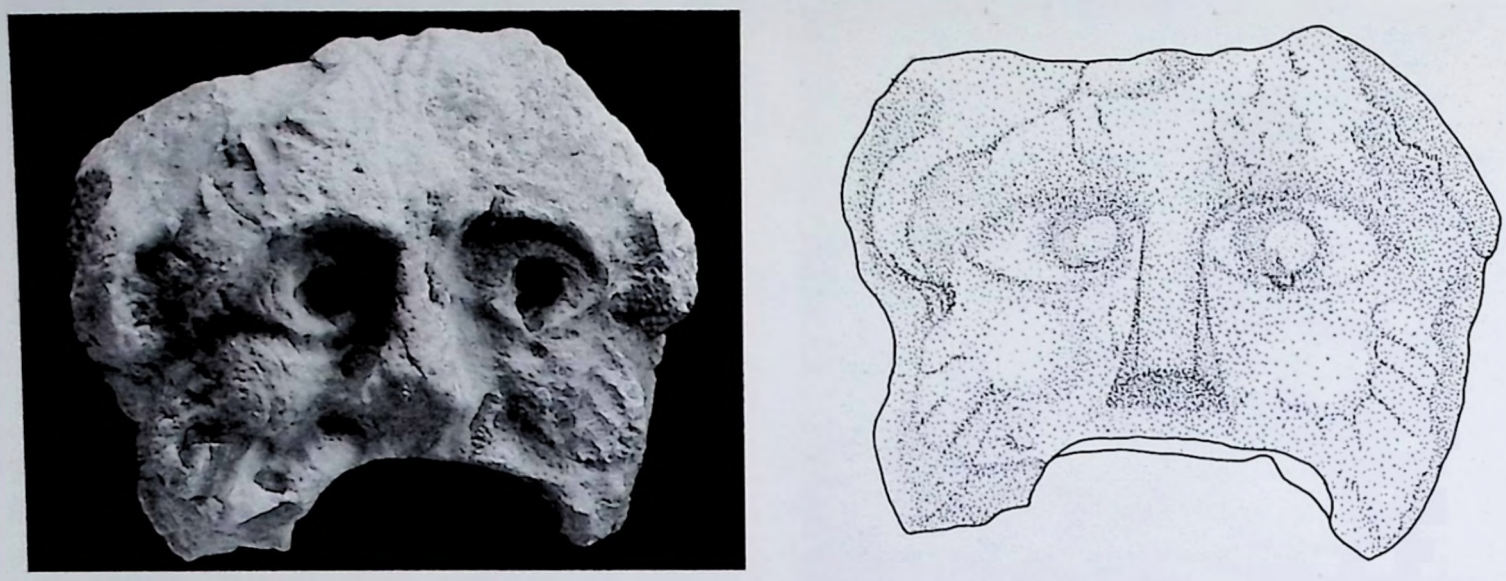


Fig. 3. Mask. Fragment of a fountain.

open mouth – the spout for the water fountain – remains intact.

The sculpture resembles the comic mask of the *senex*, the elderly man who, according to Bieber (1961:247), is characterized by a grotesque, almost bald, figure.

Cat. no. 3. Mask of an elderly balding and bearded male, seriously damaged in its lower part (Fig. 4). The face is oval, the eyes are almond-shaped and slightly protruding, and the pupils are undefined. The hair on the temples is thick and wavy; the forehead features a heavy molded wrinkle. The lower part of the open mouth is missing.

The mask has the same features as **no. 2** and seems to resemble the comic mask of the *senex* (Bieber 1961:247).

Cat. no. 4. Head of a young man (Fig. 5). Although damaged in its lower half, this face is the best preserved one in the entire assemblage. The head is oval-shaped. The hair consists of thick locks that create a heavy coiffure covering a good part of the forehead. The cheeks are full and show a certain degree of modeling. The eyes are almond-shaped and have roughly-carved round pupils. The forehead and nose seem to be part of a single flat surface, while the cheeks and eyes are part of

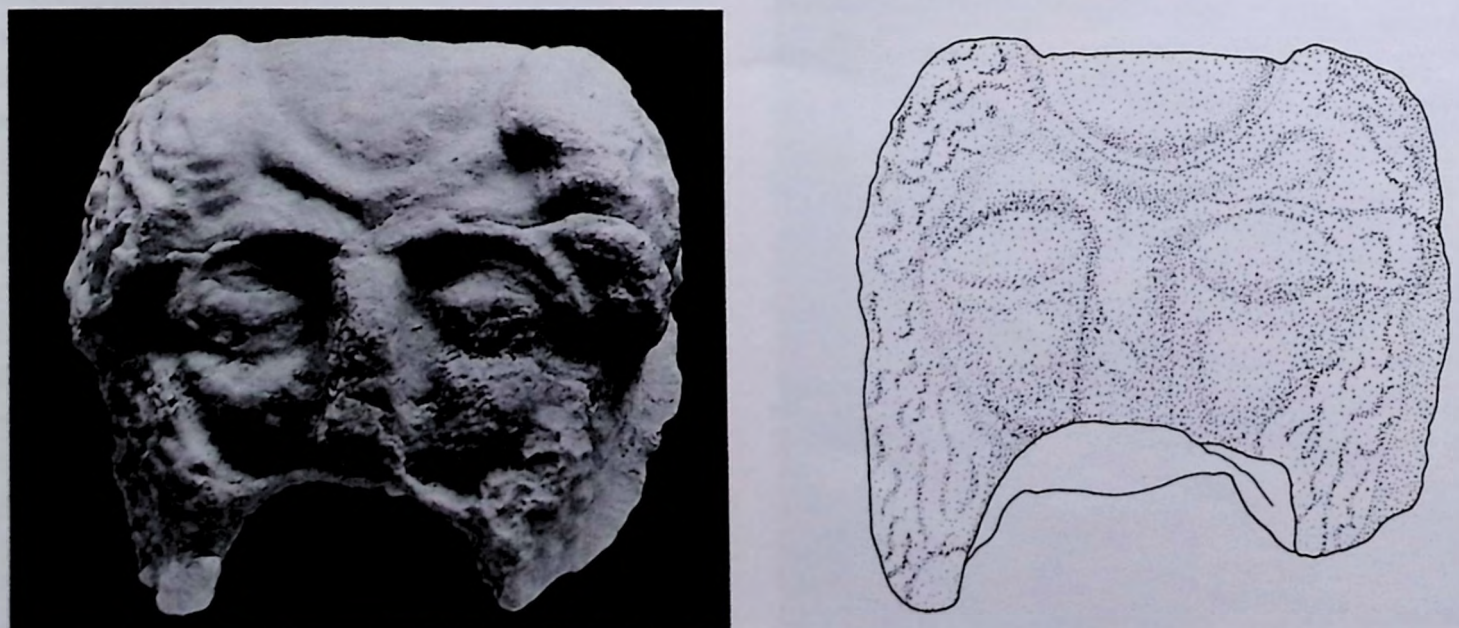


Fig. 4. Mask. Fragment of a fountain.

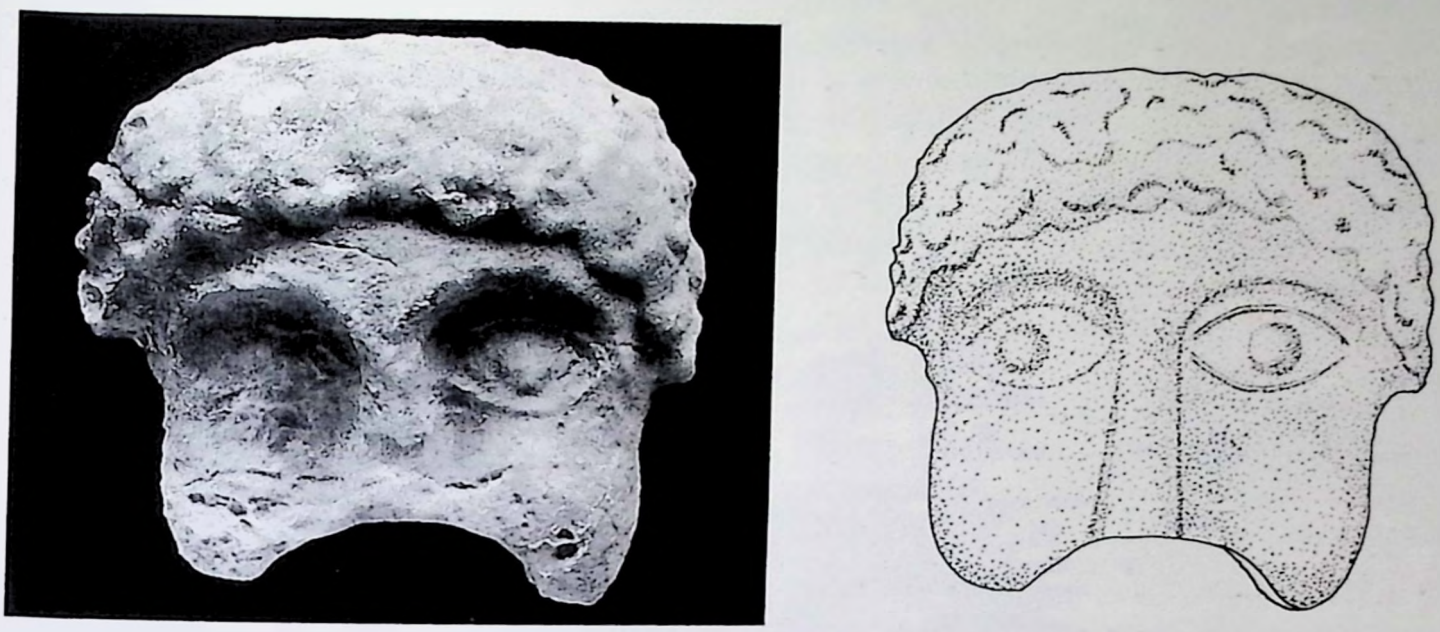


Fig. 5. Fragment of a fountain depicting a young man.

another, lower one. The eyes are large in proportion to the length of the face (1:5). The forehead is narrow and seems to be laden with the hair which frames the entire face.

These stylistic features are characteristic of busts of Constantine, which appear, for example, in Asia Minor at Perge and Side (Inan and Rosenbaum 1966: nos. 275, 276). These sculptures, and the one from Hammat Gader, have similar features: (a) full cheeks and a flat, unmodeled forehead; (b) a uniform, almost unmodeled mass of heavy hair which frames the face; (c) a flat forehead and straight nose which together form two deep arches for the eyes.

The fragment seems to depict a young man and not a mask. It may represent a mythological hero or god, but we are unable to make any positive identification because of the absence of attributes.

The custom of decorating fountains with figural heads is very ancient. The decoration of fountains with animal heads is attested on vase paintings from the Hellenistic period. One black-figure vase features the heads of lions and other open-mouthed animals spouting water (Kapossy 1969: Taf. 4; Noak 1910: Taf. 100).

The use of a lion's head on fountains is frequently attested in Roman times (Neurburg 1960:98). In the Faustina Therms at Miletus, lions are sculpted in full, crouching around the pool and spouting water from their open mouths (Wiegand 1928:Figs. 86-87). At Scythopolis (Beth Shean), the round sculpted head of a lion with an open mouth (on exhibit in the Rockefeller Museum, Jerusalem) seems to have been part of a fountain.

The use of sculpted human heads for the adornment of fountains is attested in the Hellenistic period and continued into the Roman period. In Roman times, the fountains were frequently decorated with human faces, in some cases resembling masks of mythological figures and, more often, of figures from the comic and tragic theater (Neurburg 1960:99).

The custom of using theater masks for architectural decoration was widespread throughout the Roman world, on fountains as well as on lintels and sarcophagi. At Tel Mevorakh, near Caesarea Maritima, a marble sarcophagus is adorned with a tragic mask overlying a garland (Olami and Ringel 1978:Figs. 1, 2). On a Roman marble door from Jaffa, the bust of a man is depicted holding a tragic mask of a middle-aged man with thick smooth hair and a long moustache framing an open mouth (Pinkerfield 1955:Pl. VIIIA). Human faces and masks appear on certain architectural elements, such as friezes and capitals, at Beth Shean. Although the decoration of fountains with human heads seems to have been common in Roman times, it is difficult to find an exact parallel to the Hammat

Gader fountains. Only at Pompeii (some centuries earlier than Hammat Gader) are there a number of fountains, resembling those at Hammat Gader, scattered among the various buildings. At Pompeii, the blocks are made of travertine, lava or marble and are decorated with animal heads, masks, as well as mythological figures such as Mercury, Fortuna, and Oceanus (Eschebach 1982: 21-26).

The practice of building fountains in the image of animals or humans, with water spouting from their mouths, is attested in an early rabbinic source from Palestine:

> A spring which flows out of an idol, one should not bend down before it and drink ... a figurine which spouts out water in towns, one should not place his mouth on its mouth and drink ... (Tosefta, Avodah Zarah 6:5-6).

In summary, besides the sculptures resembling animals (Fig. 1) found on the fountains at Hammat Gader, three of the heads resemble theater masks and the fourth a bust of a young man, hero or god.

The characters of the theater masks are difficult to define. No. 1 seems to be a tragic mask and Nos. 2 and 3 comic masks; although in the late Roman period the difference between the tragic and comic masks was more pronounced than in earlier times, both types assume similar features, such as a high coiffure of tight curls, a large mouth, and very large eyes.

According to the archaeological finds and stratigraphy of the fountains, and especially certain stylistic features characterizing the head of the young man, the masks seem to belong to the second phase of the Hammat Gader baths, i.e., the fourth to fifth centuries.

MOSAIC FRAGMENTS

Tesserae and fragments of mosaics were found scattered throughout the Hammat Gader excavations. The fragmentary condition of these finds does not permit us to reconstruct the mosaics themselves; it was therefore decided to deal with the technical features of the various mosaic pieces.

Most of the fragments were found on the floor around the walls of Area E. Some of them were attached to stones, leading us to conclude that the walls of this hall were decorated with mosaics. Beneath the mosaics was a 1.5-cm-thick layer of white plaster in which the tesserae were embedded. The *opus tessellatum* is finer in the patterns than in the background. The density of the background designs is $10\times11=110$ per 1 dm^2, while that in the patterns is $12\times13=156$ per 1 dm^2. The tesserae used for the background are generally white, black or gray limestone; some of the black tesserae are made of basalt. The colored tesserae are of turquoise, aquamarine, yellow or bottle-green glass.

On the basis of the fragments, it may be assumed that the decoration of the mosaic wall featured both geometric and figurative patterns. Some fragments with Greek letters attest to the former presence of inscriptions. Following is a description of some of the fragments (Fig. 6).

Fragment no. 1. Glass and limestone tesserae. A pattern of tangential spirals formed by alternate rows of green and yellow appears on a white background.

Fragments nos. 2-7. Fragments of the same pattern, containing a band of black basalt tesserae. Below the black band are stepped triangles of white tesserae on a red secco background.

Fragment no. 8. Greek letters (M I A) are formed by black tesserae on a white and yellow background.

Fragment no. 9. Fragment of a face. The hair is depicted by gray and black tesserae on a white background; the skin of the face is created by pink and light red tesserae. Part of the left eye is visible; the eyebrow is outlined by black tesserae on a white background.

Fragment no. 10. A hand depicted in three-quarter view. The wrist is straight and the hand is bent. Only four fingers are visible. The hand is composed of white and pink tesserae to create a gradation of shades from pale white to darker pink, a technique which gives a three-dimensional effect.



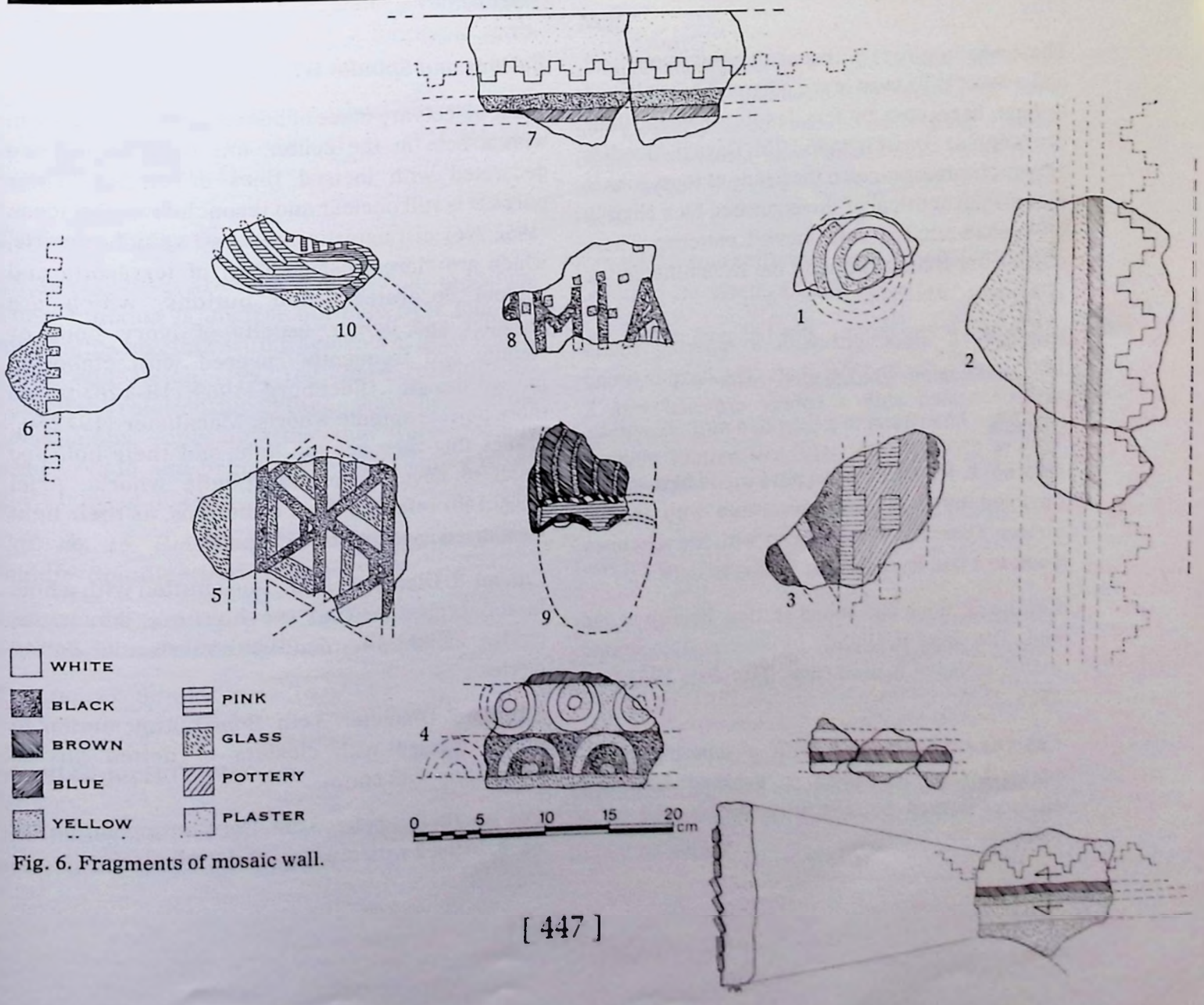


Fig. 6. Fragments of mosaic wall.

SMALL FINDS

The various small finds at Hammat Gader are living testimony of life at the site. Jewelry probably lost by bathers, clothing accessories left in the *apodyteria*, and small utensils or game pieces used by visitors bring this site to life more readily than any other find.

The objects below are described according to the various materials from which they are made and are grouped according to their purpose. The jewelry is treated as a separate category.

Nearly all of these objects were found in the late Byzantine to Umayyad levels; therefore, they appear to have been in use during this period of floruit at the Hammat Gader baths.

Bone and Clay Objects (Pl. I)

Pins

These are long rods with a shaft point at one end and a decorative head at the other. All are believed to have been used by females to ornament their dress or hair (Davidson 1952:276; Dayagi-Mendles 1989). The decoration on the heads of these pins is globular, cylindrical or distinguished by a slightly broadened surface with incised patterns. These objects are characteristic of the Byzantine period (Davidson 1952:280).

Cat. no. 1. Bone pin with a tapering round perforated point and flat shaft. The head is broad and decorated with a sphere crowned with a cylinder.

Cat. no. 2. Head of a bone pin formed by a sphere crowned by a cylinder decorated with incised circles. Date: the sherds found with the specimen point to a late Byzantine to Umayyad date.

Cat. no. 3. Bone pin, round section. Broken at one end. The head is slightly broader and decorated with a series of incised rings (Davidson 1952:Nos. 2325, 2330).

Cat. no. 4. Bone pin with a tapering round perforated point, ending in a broad decorated surface formed by a sphere surmounted by a cylinder.

Cat. no. 5. Head of a bone pin formed by a cylinder crowned by a sphere.

Game Pieces

Two game pieces – a die and a small sphere – were found at Hammat Gader.

Cat. no. 6. Bone die. Highly polished with worn corners. The values, which appear in the accustomed fashion – 1-6, 2-5, 3-4 – are indicated by small circles with a point in the center and were probably made with compasses. Parallels: Davidson 1952:Nos. 1739-1745; Tushingham 1985: Fig. 69:8, 9.

Cat. no. 7. Small bone sphere, used as a game piece. Highly polished. The date, according to the ceramic context of Locus 324, is late Byzantine to Umayyad. **Parallels:** Colt 1962:Pl. XXI:20 (sixth to seventh centuries).

Buttons and Spindle Whorls

These objects are made of bone, have a discoid form with a hole in the center, are lightweight, and decorated with incised lines or circles. Their purpose is still unclear and inconclusive. Davidson (1952:296) distinguishes between spindle whorls, which are "large, heavy, often of terracotta and seldom decorated," and buttons, which are "smaller and lighter, usually of ivory, bone or steatite and frequently covered with elaborate incised design." Oldenburg (1969:118-128) terms these objects spindle whorls. Macalister (1912:91) argues that they are too light and their hole too small to have served as spindle whorls. Ariel (1990:140) refers to them as buttons, as their light weight seems to suit this purpose.

Cat. no. 8. Diameter: 3 cm. Bone button with a hole in the center. Around the hole are concentric circles, incised all around with clusters of dotted circles.

Cat. no. 9. Diameter: 3 cm. Bone button similar to no. 8. Incised with clusters of dotted circles alternating with spirals.

Cat. no. 10. Diameter: 3 cm. Bone button similar to no. 8. Incised with clusters of dotted circles.

Cat. no. 11. Diameter: 2.2 cm. Circular bone button with a hole in the center, surrounded by a groove. Decorated with sparsely incised lines. Date: accompanying ceramic assemblage points to a fourth- to sixth-century date. Parallels: Davidson 1952:Nos. 2554-2572; Colt 1962:51, Pl. 21:7; Ariel 1990:B1 168; Oldenburg 1969:117, Fig. 45; Reisner et al. 1924:Pl. 90; 13.

Spindle Whorls

These objects are conical in form and pierced in the middle, and because of their weight apparently belong to the spindle whorl category.

Cat. no. 12. Black stone. Conical spindle whorl pierced in the middle. Parallel: Meyers et al. 1981:232, Pl. 9.20, 4.

Cat. no. 13. Black basalt stone. Conical spindle whorl pierced in the middle. Date: accompanying ceramic assemblage points to a fourth- to sixth-century date.

Cat. no. 14. Conical spindle whorl pierced in the middle. Parallels: Reisner et al. 1924:341-342; Crowfoot 1957:401:11.

Perforated Clay Discs

These clay discs are conical or globular in section. Their function is unclear but they were found at many sites together with fragments of glass lamps. Peleg and Reich (1992:160) have recently discussed the relationship between these discs and the glass lamps, suggesting that they were probably used to hold and balance the wick floating in the glass bowl of a lamp.

Cat. no. 15. Rounded clay cone, pierced in the middle. Spindle whorl (?).

Cat. no. 16. Similar to no. 15. Parallels: McCown 1947:Pl. 98:1; Peleg and Reich 1992:140.

Cat. no. 17. Similar to no. 16.

Metal Objects (Pl. II)

This category includes various objects, such as utensils made of iron or bronze.

Hook

Cat. no. 18. Bronze hook. Probably used to suspend a lamp or a polylychnion. Parallels: Davidson 1952:No. 1450; Boardman 1989:Pl. 53:104.

Spoon

Cat. no. 19. Bronze cosmetic spoon. Small circular bowl and a long handle. Parallels: Tzaferis 1974:Nos. 59-60 (seventh to eighth centuries); Meyers et al. 1976:Pl. 8.2:9.

Knives

The blades found at Hammat Gader seem to be knives for domestic use.

Cat. no. 20. Iron blade of a knife. Length: 20 cm.

Cat. no. 21. Iron blade of a knife. Length: 4 cm.

Nails

A large quantity of two kinds of iron nails was found. The first kind has a large rectangular head and a short pointed end; the second has a small round head and a long pointed end. These nails were probably used in wooden doors or wooden roofs.

Cat. no. 22. Iron nail with a large rectangular head. Length: 5 cm. Width: 4.5 cm.

Cat. no. 23. Iron nail with a small round head.

Cat. no. 24. Iron nail with a small round head.

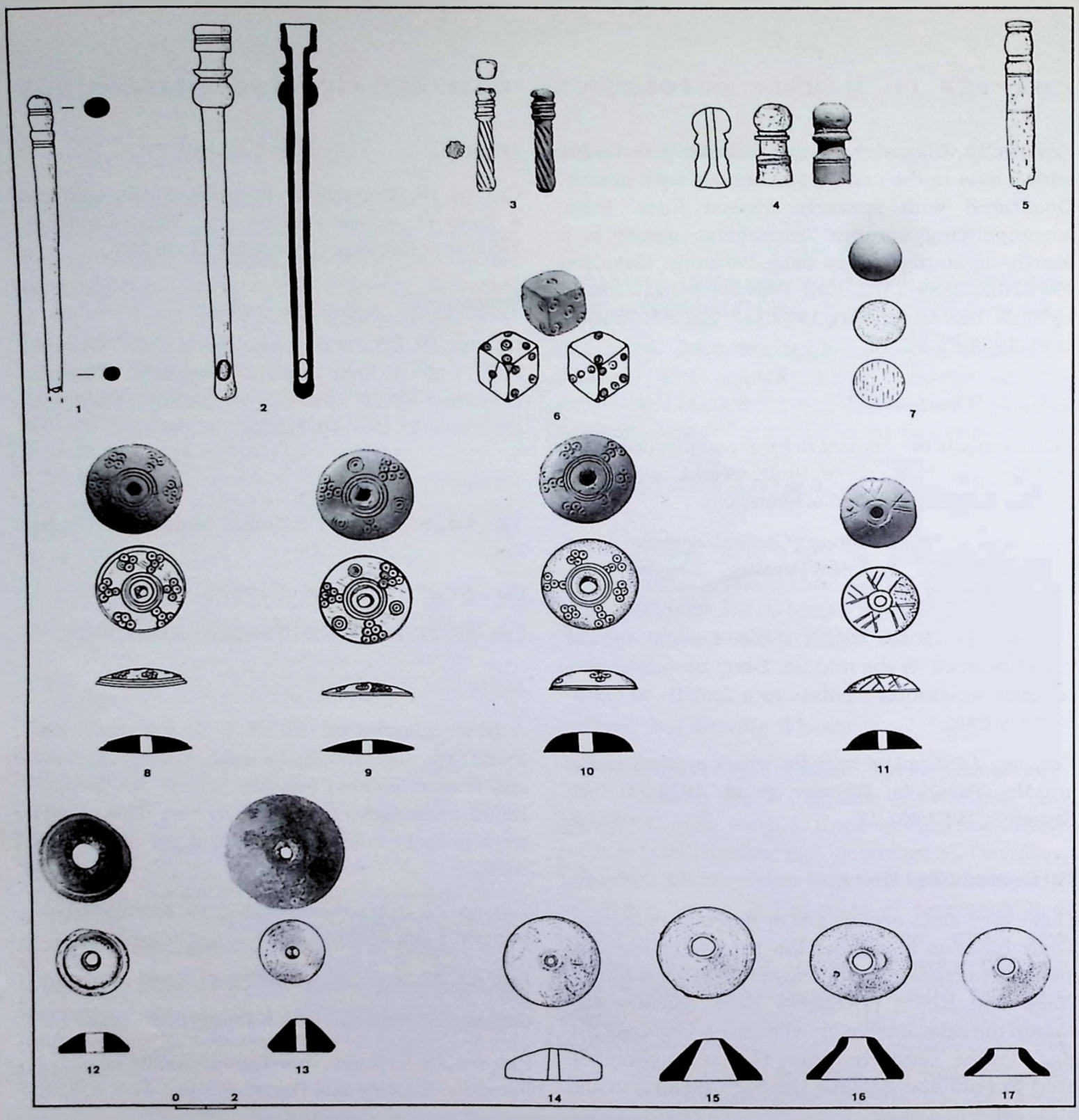
Cat. no. 25. Iron nail with a round ringed head. Parallels: Tzaferis and Peleg 1989:Fig. 72:5, 6, 7, 8; Avigad 1976:Pl. LXXIII:4.

Jewelry (Pl. III)

Jewelry of different materials is classified in this category, including rings, bracelets, beads, gems, earrings, etc.

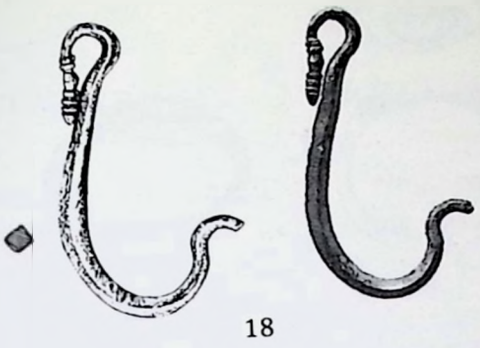
Rings

Three gold rings and one silver ring were found at the Hammat Gader baths. They all date to the late Byzantine period.

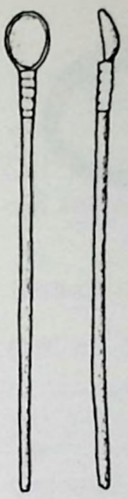


Pl. I: Bone and clay objects.

Cat. no.	Type	Locus	Material
1	Fragment of a pin	506	Bone
2	Pin or netting bobbin	506	Bone
3	Fragment of a pin	621	Bone
4	Fragment of a pin	213	Bone
5	Head of a pin	302	Bone
6	Die	324	Bone
7	Sphere	314	Bone
8	Button	205	Bone
9	Button	205	Bone
10	Button	211	Bone
11	Button	205	Bone
12	Spindle whorl	200	Black stone
13	Spindle whorl	516	Black stone
14	Spindle whorl	201	Stone
15	Disc	213	Buff clay
16	Disc	101	Buff clay
17	Disc	101	Buff clay



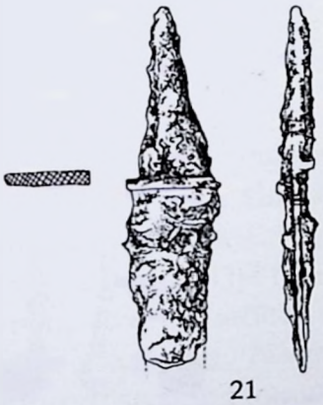
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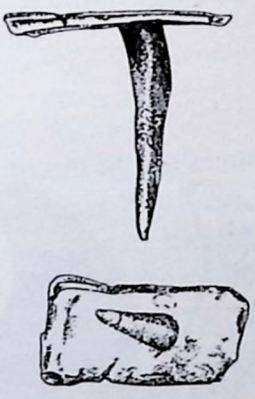
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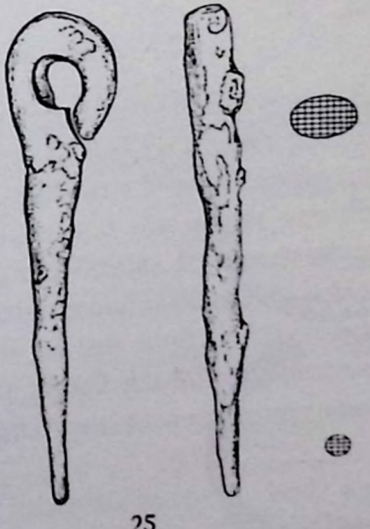
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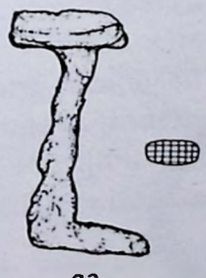
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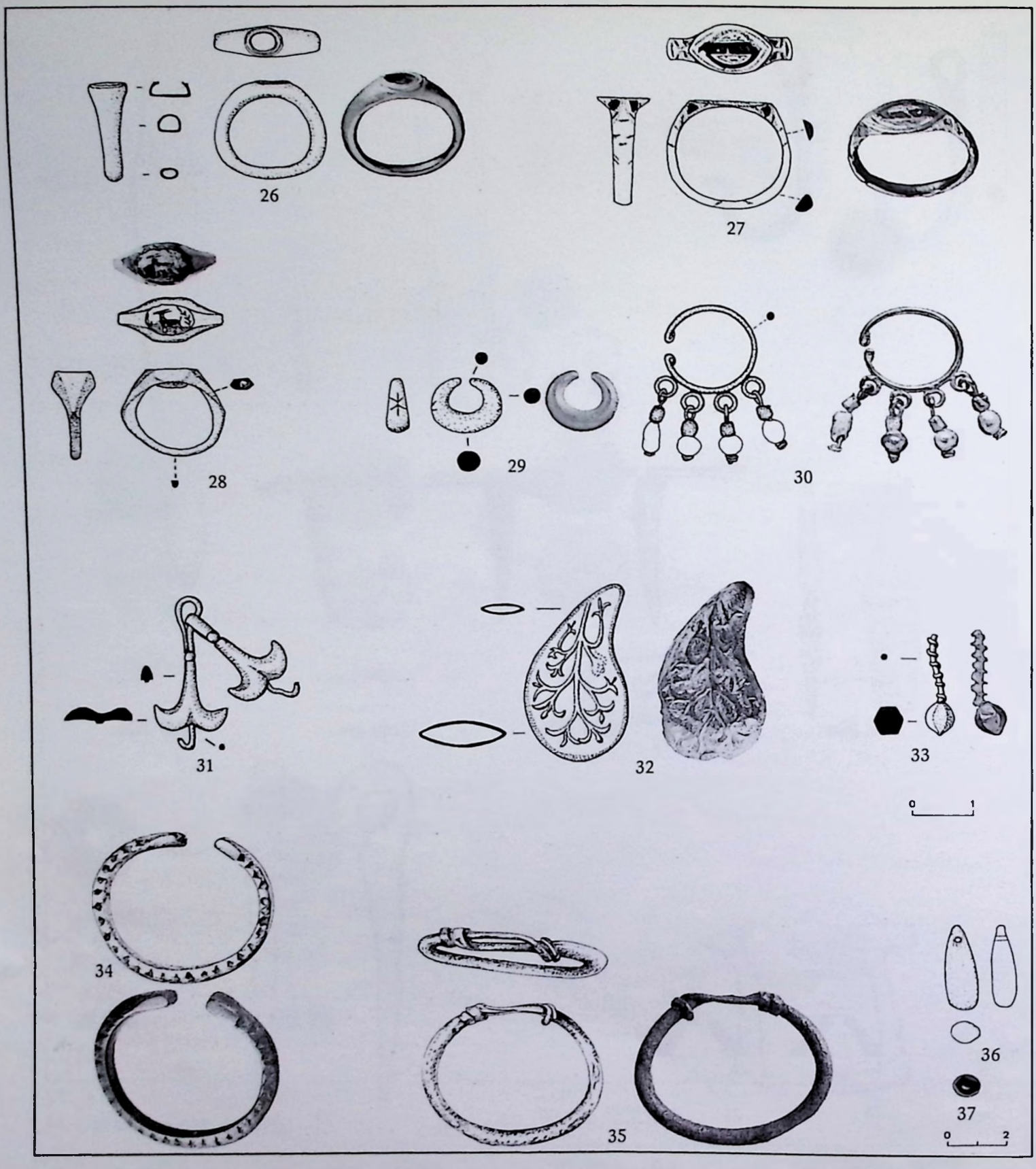
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Pl. II: Metal objects.

Cat. no.	Type	Locus	Material
18	Hook	523	Bronze
19	Spoon	300	Bronze
20	Blade of a knife	512	Iron
21	Blade of a knife	512	Iron
22	Nail	325	Iron
23	Nail	200	Iron
24	Nail	200	Iron
25	Nail with round ringed head	600	Iron



Pl. III: Jewelry.

Cat. no.	Type	Locus	Material
26	Ring	433	Gold
27	Ring	306	Silver
28	Ring	203	Gold
29	Earring	203	Gold
30	Earring with pendants	213	Gold
31	Pendant	326	Gold

Cat. no.	Type	Locus	Material
32	Pendant	516	Gold
33	Pendant	426	Gold
34	Bracelet	701	Bronze
35	Bracelet	426	Bronze
36	Bead	101	Agate
37	Bead	703	Agate

Cat. no. 26. Small gold ring, round hoop, deep circular hole for gem (now missing). A similar specimen was found in Locus 431. Parallel: Meyers et al. 1981:Pl. 23:15, 17.

Cat. no. 27. Silver ring, round hoop, wide and flat oval bezel decorated with incised lines forming two semi-ellipses flanking a central blue-painted strip. Parallels: Meyers et al. 1981:Pl. 9.8, no. 2.

Cat. no. 28. Small oval gold ring. The bezel is flat, wide, and thickened, and set with a white and red gem, exhibiting a quadruped animal (gazelle?) in intaglio flanked by two branches.

Earrings

Two kinds of earrings were found at the Hammat Gader baths: the simplest one has the form of a swollen crescent; the other is shaped like a ring with a pendant. The beads suspended from such an earring were called *crotalia* by the Romans because of the manner in which they were mounted, striking against each other like castanets (Dennison 1918:151).

Cat. no. 29. Gold earring in the shape of a swollen empty crescent decorated on the side with incised lines. Parallels: Chéhab 1986:100; Petrie 1927:VIII, 159.

Cat. no. 30. Round earring with four pendants, each suspended from a circle adjoining a ring. The pendants are composed of a white spherical bead and an orange cylindrical one. Date: fourth to sixth centuries. Parallels: Chéhab 1986:Pl. XI, no. 2 (fourth to fifth centuries); Colt 1962:Pl. XXII; 13.

Cat. no. 31. Gold pendant. *Crotalia* in the shape of lily flowers.

Cat. no. 32. Gold sheet shaped like a leaf in the repoussée technique. Probably the pendant of a necklace. The repoussée technique was a common method of shaping gold sheet. The metal rested on a bed of a yielding material, such as wood, and the outlines of the decoration were made on the front with a tracer and the embossing within the outline was made from the back with a round-faced punch (Higgins 1961:105). Date: accompanying ceramic assemblage points to a fourth- to sixth-century date.

Cat. no. 33. Gold pendant composed of a twisted rod and a faceted spherical pendant.

Bracelets

Cat. no. 34. Bronze bracelet. Band with open ends decorated with grooves. Parallels: Chéhab 1986:Pl. XV; 2.

Cat. no. 35. Bronze bracelet, rounded hoop. The ends overlap and twist spirally around the wire. Originally, the twisted ends most probably moved freely, allowing for expansion of the diameter. Parallels: Barag 1978:42, Fig. 18:106.

Beads

Cat. no. 36. Drop-shaped agate bead.

Cat. no. 37. Almost round bead. The upper side is decorated with a bird standing on a stem. The bird is long-beaked, has a long back feather, and is incised in profile. The hole is on the sides of the bead.

Incense Burner

A small incense burner (Fig. 7) was found in Locus 324 of Area C. It is rectangular in form, stands on four legs, and has a broken handle on one side. The upper edges and the center are decorated with incised dotted circles. It is made of soft white chalk and contains remains of charcoal in the center.

The use of this kind of incense burner in the Byzantine period was quite common and is attested by the finds from various excavations (see parallels below).

Such incense burners had a secular use (Rahmani 1980). Jewish or Christian incense burners for religious purposes differ in their form from this kind of secular incense burner. The former are distinguished by a spherical, cubic or octagonal covered box suspended from a chain with a ring; the latter, which was used by all the inhabitants of Palestine, was an open box with a handle, similar to our specimen. According to Rahmani (1980:121), these incense burners were in use from the late sixth to the early eighth centuries.

This specimen was found at Hammat Gader together with ceramic artifacts and coins dating to

the late Byzantine and early Umayyad periods. Parallels: Bagatti 1964:265, Fig. 1; Saller 1941:102, Fig. 15; Avni and Dahari 1991:318, Figs. 8-9; Macalister 1912:358, Fig. 185.



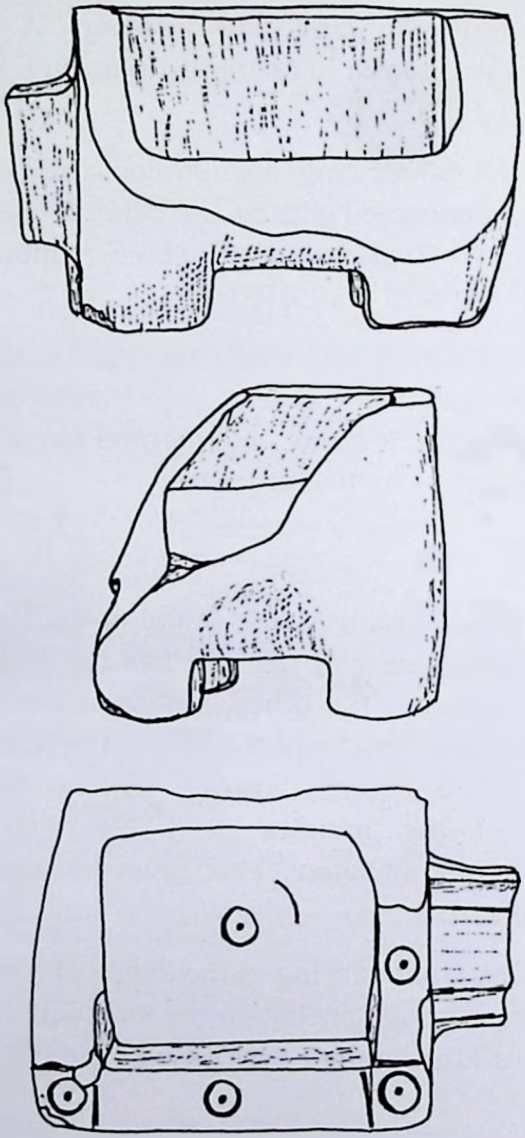


Fig. 7. Incense burner.

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CHAPTER 13

THE MARBLE STATUES FROM HAMMAT GADER

Roni Ben-Arieh

This chapter presents and analyzes the iconography and style of two marble statues found in the excavations at Hammat Gader.[1] One of them is the figure of a well-to-do matron wearing a long chiton and a himation drawn tightly about her body. The other statue is of a nude male whose chest is covered with an animal skin and whose left arm is covered with a chlamys.

THE STATUE OF THE MATRON

(Figs. 1, 2)

The matron rests the weight of her body on her left leg, while the calf of the right leg is bent backward. The left hip juts out slightly, creating a rounded contour framed by the left arm; the left hand clutches the himation. The right arm is concealed beneath the himation, which is draped over the chest and left shoulder and falls over the back of the statue. The right foot extends from beneath the chiton.

The statue is made of white crystalline marble and measures 95 cm in height and 35 cm in width; the height of the base is 5 cm. The head and neck are missing, and the middle of the right arm, the palm of the left hand, and the base are broken. On the right side of the statue, beneath the arm, is a long, narrow depression, the function of which is unclear.

The front of the statue was carefully sculpted, while its back shows less detail. Consequently, it may have stood with its back to the wall in one of the niches or on a pedestal next to the southern wall in the Hall of Piers. In the Umayyad period the statue was hidden in the fill under two walls (L. 511) between Areas C and E.

Since we have neither a bust nor an identifying inscription, the figure remains unidentified. It is possible that the statue is of a highly regarded woman or perhaps even an empress.

Statues of standing females in various poses were widespread in the Roman empire; some are copies of Hellenistic models.[2]

The Style

Notable is the harmony between the stance of the body and the garments covering it. The left arm hugging the side of the body, as well as the folds of the himation emerging from one point at the hip, accentuates the rounded contour on the left side of the body. The right thigh and knee are visible beneath the cloth which is stretched over the body; and the right breast is similarly accentuated. The chiton has the appearance of a thin cloth designed with many folds.

In the upper part of the body, the thick fold of the himation drapes over the left shoulder and continues over the back of the statue. The relatively high relief and the play of light and shade in this area give the impression of a heavy cloth.[3] In contrast, the folds of the himation on the lower part of the body are carved in relatively low relief (3-5 cm), thus alleviating the impression of the garment's heaviness.

In an attempt to determine where and when the statue was sculpted, we performed a stylistic comparison with female statues from Rome and Asia Minor dated to the first to third centuries C.E. It became clear to us that the matron from Hammat Gader is closer in stylistic conceptualization to the statues from Asia Minor.[4]

A good example is a female figure wearing a chiton and a himation and adopting the same pose as our statue, found in the baths at Ephesus and exhibited in the museum in Izmir (Aziz 1993:Inv.





Fig. 1. Photograph and sketch of statue of matron from Hammat Gader, frontal view.

516). Despite these similarities, a number of stylistic differences can be noted. The chiton and himation of the statue from Ephesus appear to be heavier, accentuated by the many folds in high relief. One gains the impression that the garments and the body are two separate entities, in contrast to the statue from Hammat Gader.

In our search for a stylistic model resembling the matron from Hammat Gader, we came across a statue found in the eastern stoa of the *palaestra* of the gymnasium at Salamis on Cyprus (Fig. 3).[5] This statue differs from the one revealed at Hammat Gader in its more elastic and plastic appearance. Despite the visible stylistic differences between

these two statues, the artistic conceptualization of their bodies in relation to the garments is similar.

Both statues (cf. Figs. 1, 2 and 3) feature the same pose and a similar relationship between the garments and the body beneath them. The sculptors create harmony between the body and the garments, giving the impression that the latter could not exist without the former or *vice versa*. It is possible that the statue from Salamis, or one like it, served as a model or "prototype" for the statue at Hammat Gader, or, alternatively, that both of them were based on a common model.



Fig. 2. Statue of matron from Hammat Gader, rear view. ▶

Fig. 3. Statue from Salamis, after Karagheorghis & Vermule 1966:Pl. XIV, 2.
▼



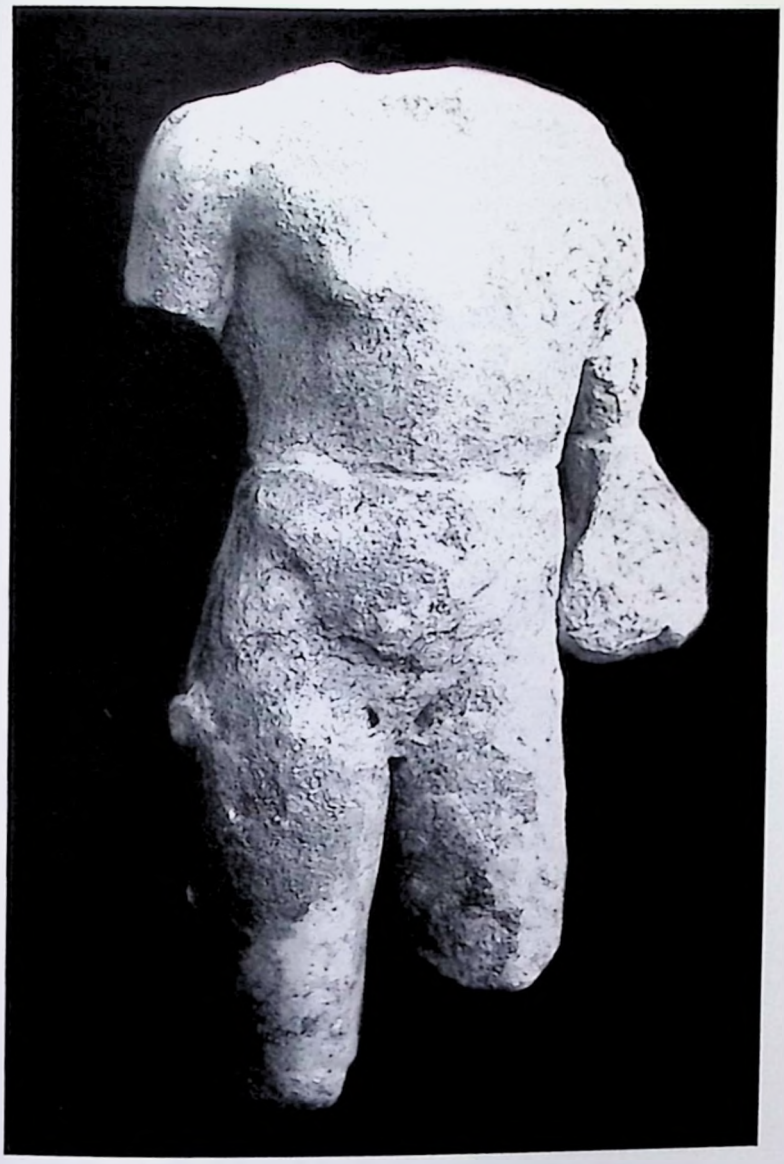


Fig. 4. Male statue from Hammat Gader.

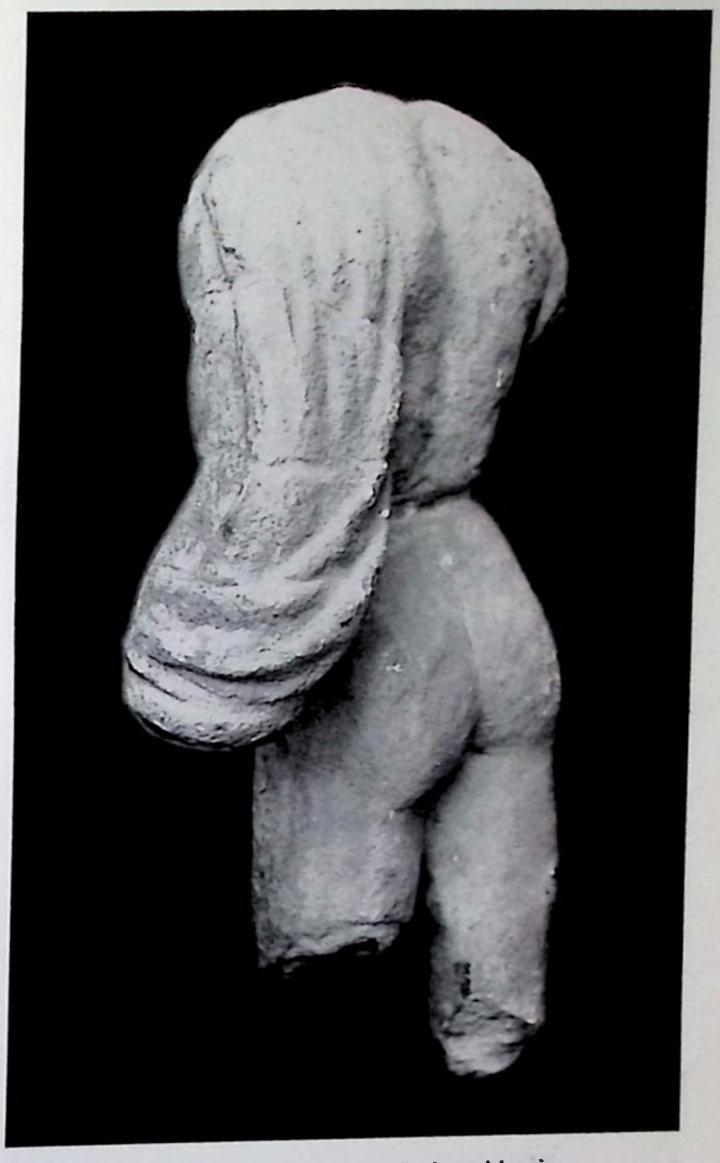


Fig. 5. Male statue from Hammat Gader, side view.

THE STATUE OF THE MALE FIGURE

(Figs. 4-7)

The second statue from Hammat Gader, discovered in a channel postdating the Byzantine floor in the Hall of Inscriptions, is of a nude male and is poorly preserved. It is made of yellowish-white coarsely crystalline marble; it is 58 cm high and 38 cm wide. The statue is broken into two parts that fit together. The head and neck are missing and the right arm is broken. The right leg is preserved up to the knee and the left leg is broken off at the middle of the thigh. The front part of the statue is worn, while the rear part is better preserved. A small rectangular protrusion from the left pelvic area probably supported the statue or its right hand. Because of the poor state of preservation, especially of the front part, the iconographic identification of the figure is uncertain.

An animal skin on the left side of the chest appears to be that of a lion (Figs. 8, 9). If so, it is possible that the statue depicts Heracles; however, the absence of a club or any other clear attributes makes this identification difficult.[6] The chlamys (?) wrapped around the left hand possibly indicates that the statue is of one of the gods wearing such a garment.[7]

The rear part of the statue is better preserved and facilitates determination of its style.



Fig. 6. Male statue from Hammat Gader, side view.

The Style

The buttocks occupy about half of the length of the back. They are flat and rectangular, rounding at the point where their bases meet the top of the legs. The buttocks are high and end at the level of the hips. A line separates the buttocks and ends beneath the narrow hips, from which the back extends and broadens at the shoulders. In the center of the back is a shallow depression dividing it into two sections. No muscles are visible on the back, but the shoulder area is emphasized.

In many other statues from the second and third centuries[8] we note a different stylistic treatment: the buttocks occupy a smaller area in proportion to the back, are rounded evenly over their entire surface, protrude in high relief, and the back muscles are well defined.

The statue most closely resembling the one found at Hammat Gader is from the area of the latrines in the gymnasium at Salamis (Figs. 8, 9).[9] In both statues (cf. Figs. 7 and 8) the buttocks are flat and rectangular, and a groove separates them. The back widens toward its well-defined upper part. In the Salamis statue the skin of a panther is draped in a



Fig. 7. Male statue from Hammat Gader, rear view.

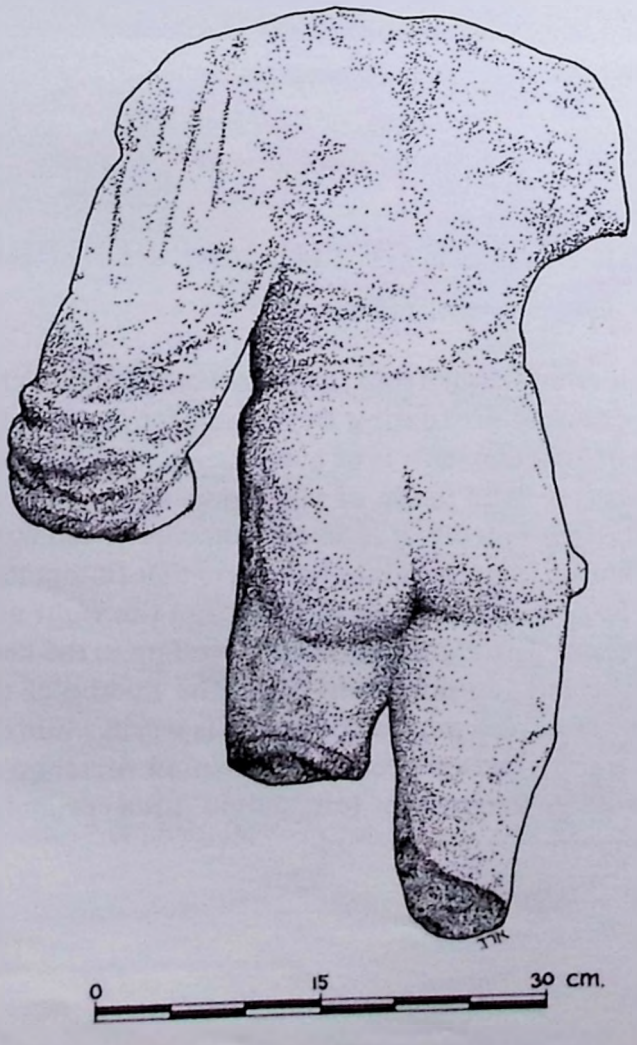




Fig. 8. Statue from Salamis, after Karagheorghis & Vermule 1966:Pl. IX, 3.



Fig. 9. Statue from Salamis, after Karagheorghis & Vermule 1966:Pl. IX, 4.

straight line separating the back from the left shoulder, as in the statue from Hammat Gader.

SUMMARY AND CONCLUSIONS

Results of the isotope examination of the Hammat Gader statues[10] show that the marble of the male statue came from Aphrodisias in Asia Minor. However, the stylistic parallels closest to both of our statues are two marble statues from Cyprus dating to the second half of the second century C.E. In any event, the marble used in Cyprus came from Asia Minor or Greece and, moreover, sculptors came to Cyprus from workshops in the production centers of western Asia Minor – Ephesus, Izmir, and Aphrodisias (Karageorghis 1964:27, 28; 1966: 50, 51).

The stylistic resemblance between the statues from Hammat Gader and those from Salamis, Cyprus was noted by Vermule and Anderson (1981:8-9) in an article on Greek and Roman sculpture in Palestine:

> The Greco-Roman copies from the Holy Land are very much like those which have been excavated on Cyprus. The statues excavated at Caesarea Maritima, although fewer in number, give every evidence of being like those recovered from the civic complexes at Cypriote Salamis.

On the basis of the parallels from Salamis, the Hammat Gader statues should be dated to the second half of the second century C.E. They decorated the baths from their inception up to the Byzantine period, as can be ascertained from the pagan atmosphere described in the poem by Eudocia. Only in later periods, with the decline of the baths' importance, were the statues removed and hidden.

NOTES

1. I would like to thank Dr. Yizhar Hirschfeld who enabled me to study the statues. Today they are to be found in one of the warehouses at Hammat Gader.

This study was conducted in the framework of a seminar paper under the guidance of Dr. Aliza Cohen Mouchlin.

2. According to Smith (1991:84, 85), differences between female statues from the Hellenistic and Roman periods may be noted in two interrelated areas. In the Hellenistic period, female statues are distinguished by the detailed features of their garb, which vary from one statue to the next. In the Roman period, however, many statues are identically garbed, and they are thus distinguishable only by the individualistic head in each case.
3. In the Roman world, the chiton is called *stola* and the himation, *palla*. The garb in the Roman period was adopted from the Ionian tunic that was introduced into Greece from Asia Minor in the fifth century B.C.E. The Ionian tunic consisted of a chiton made of thin linen and a himation made of a heavier fabric, such as wool (Houston 1947:38-47).
4. From the comparison we conducted, it was noted that statues of upright-standing women from Rome and Asia Minor in the first centuries C.E. differ in style. A more comprehensive study of this subject is required for corroboration of these conclusions.
5. The statue from Salamis, 1.46 m high and 54 cm wide, is made of white crystalline marble; the head is missing and the neck is broken. Karageorghis dates it to 150-175 C.E. on the basis of its resemblance to a statue from Cyrene. In his opinion, the prototype of this statue is a Praxitelean model created in the mid-fourth century B.C.E. He identifies the figure either as a woman or as the goddess Kore (Karageorghis and Vermule 1966:27-28).
6. We found no exact iconographic parallels. There are statues in which the lion skin lies across the chest, shoulder, and left hand. Generally it hangs down, below the hand, and in such cases the left hand holds a club (Boardman 1988:728-838).
7. In the absence of other attributes, it is impossible to identify the god being personified.
8. See, for example, the statues from Samaria representing Dionysius and Apollo (Crowfoot et al. 1957).
9. The statue from Salamis, 39 cm high and 31 cm wide, is made of white crystalline marble. Only the torso remains; the hands are broken, the skin of a panther or wild cat covers the left shoulder, and the figure is holding a crook or *pedum*. According to Karageorghis, the statue is a copy of a Hellenistic prototype, but the stance goes back to the figures of Polykleitus from the fifth century B.C.E. He identifies the statue with Pan because of its goat legs. The statue is dated by Karageorghis to the mid-second century C.E. on the basis of its style and the use of a drill, a technique employed in the Hadrianic and Antonine periods (Karageorghis and Vermule 1966: 21).
10. Dr. Zeev Perl of the Weizmann Institute in Rehovot conducted the isotope examination of these marbles.

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CHAPTER 14

MEDICINAL HOT SPRINGS IN THE GRECO-ROMAN WORLD

Estée Dvorjetski

si primum omnibus templis saluberrimae regiones aquarum que fontes in hic locis idonei eligentur, in quibus fana constituantur, deinde maxime Aesculapio, Saluti, et eorum deorum quorum plurimi medicinis aegri curari videntur.

In the case of all sacred precincts we select very healthy neighborhoods with the suitable springs of water in the places where the fanes are to be built, particularly in the case of those to Aesculapius and to Salus, gods by whose healing powers great numbers of the sick are apparently cured.

Thus did the first-century B.C.E. Roman architect Marcus Vitruvius Pollio explain the basis for the correct selection of a site for a new sacred precinct (*De Architectura* I, 2:2).

Most sacred buildings at the sites of medicinal hot springs, known from antiquity, cannot be identified nowadays. Some of the springs were blocked and others dried up. Where they have remained in use, the ancient structures have usually been subsequently modified or replaced by later buildings (Jackson 1990a; Dvorjetski 1992a; 1992b).

The following is intended merely as some general observations on the original use of hot springs for medicinal purposes, the healing qualities of such springs, the ritual worship of the therapeutic sites, the military presence at these sites and the archaeological finds in the Greco-Roman world. This chapter will focus on a historical cross section of the socioeconomic, cultural and religious aspects of these places.

THE ORIGINAL USE OF HOT SPRINGS FOR MEDICINAL PURPOSES

As early as the era of Hippocrates (ca. 460-370 B.C.E.), who is traditionally regarded as "the father of medicine," bathing was considered not simply as a measure of hygiene. Its properties of cleaning and refreshing were augmented by more general effects, particularly its healing and curing qualities. The use of hot springs for medicinal purposes originates in the teaching of Hippocrates. In his day, the method became practical and of benefit to the sick (*Regimen in Acute Diseases* XXI, 65-68; Leibovitz 1960:341-348; Cohen and Drabkin 1958:507-508). Hippocrates' ideas were developed by Galen (ca. 129-200 C.E.) (Galen 15-21; Leibovitz 1969:911-915), Oribasius of the fourth century C.E., and others (Fontanille 1985).

Medicinal hot springs were recommended for the treatment of specific complaints, such as disturbances of the urinary and digestive tracts, weakness, headaches, joint pains, diseases of the skin and eyes, women's complaints, chest pains, pneumonia, and breathing difficulties (Jackson 1990a: 3; Dvorjetski 1994a).

Asclepiades, the first-century B.C.E. Greek physician, who introduced medical methods to Rome, stubbornly extolled the use of the baths for the sick as well as for the healthy (Edelstein 1968a). He widely used cold water for external and internal therapy; as a result, Pliny the Elder named him *frigida danda praeferens*, the giver of cold water (*Naturalis Historia* XXVI). While many despised his teaching, many others esteemed his methods, and hydrotherapy became popular during the first century B.C.E. Less extreme were the treatments

recommended by Celsus, who wrote his treatise *De Medicina* some decades after the cure of Emperor Augustus by Antoninus Musa, one of Asclepiades' pupils (Suetonius, *De Vita Caesarum Augustus* LXXXI, 1). His book gained wide recognition as a valuable source of Hellenistic medical knowledge. Due to his excellent Latin style, Celsus was dubbed *medicorum Cicero*, the Cicero of the physicians (Edelstein 1968b:177). He specialized in the doctrines of Asclepiades and regarded the use of baths as an integral part of treatment for fatigue, chills, high fever, and especially for diseases of the skin or sinews, podagra (gout), wounds, digestive disturbances, weakness, eye diseases and post-operative convalescence (*De Medicina* I:1-3; II:17; III:12, 20, 22; IV:15, 31; V:26-28; VI:6; VII:26). It should be noted that despite the successful treatment of Emperor Augustus by Musa, Celsus recommended hot baths rather than cold ones for sufferers from liver abscess and warned against all cold things (*De Medicina* II:14,17-18; III:2, 7). The Greek physician Soranus (90-150 C.E.), in his work Γυναικεῖα βιβλία (Edelstein 1968c:851), regarded baths as particularly valuable for the relaxation of physical and mental tensions. He believed that while such relaxation was very beneficial during the later stages of pregnancy, it was detrimental early on, when the seed or embryo could be expelled from a relaxed uterus. Bathing in natural waters relieves the *status strictus* – narrow state – of women suffering from menstrual or uterine disturbances (*Gynaecia* I:46,54-56, III: 10-16, 28, 32, 38, 44; Jackson 1990a:4).

Pliny the Elder (*Naturalis Historia* XXXI:3-8; XXXII:32-33) and Vitruvius (*De Architectura* VIII: 4-5; Morgan 1914:232-236) recognized various types of hot and medicinal springs. Their classifications do not differ from those of the modern era. They list sulfurous springs, whose waters "refresh the weakness of muscles and tendons" by heat; aluminous springs, immersion in which served to treat palsies, because the water opens the skin pores; bituminous springs which provided water for the irrigation and healing of "internal deficiencies"; alkaline springs; and acid springs, whose water, when imbibed, dissolves bladder stones. Pliny the Elder even collected references that contained instructions for the healing of wounds, dislocations, fractures, gout, foot conditions, fever, sciatica, headache, psoriasis, diseases of the eyes and the ears, insanity, and infertility of women (*Naturalis Historia* XXXI: 33,45).

THE HEALING QUALITIES OF MEDICINAL HOT SPRINGS

In the lands which they conquered, the Romans systematically developed hot springs in general and mineral springs in particular. Certain sites became famous for their healing properties.

Thus Aquae Cultiliae, near Rome, were praised by Pliny (*Naturalis Historia* XXXI:4) and by Celsus (*De Medicina* IV:12) for their ability to cure stomach ailments; the sulfurous springs of Aquae Albulae, between Rome and Tivoli, were described by Vitruvius (*De Architectura* VIII:3:2), the geographer Strabo (*Geographica* V:3:11) and the Roman poet Martial (*Epigrammata* I:12). Suetonius mentions that Emperor Augustus frequently attended the hot springs of Albulae, "every time that his nerves required relief" (*De Vita Caesarum, Augustus* LXXXII:2).

One of the more famous ancient healing places was Baiae, on the coast of Campania, at the northern end of the bay of Naples. The Greek biographer Plutarch relates that Marius, who fought against Jugorta, the king of Numidia, was advised to go to the hot springs of Baiae for treatment of his failing health: "he had been weakened by age and rheumatism" (*Vita Caius Marius* XXXIV,2). Baiae became the most fashionable Roman place of healing (Comfort 1976: 137-138). Celsus recommended its sulfur baths (*De Medicina* II:17:1), and Strabo described the site and its hot springs which "were appropriate both for the tastes of the discerning, and for the curing of diseases" (*Geographica* V:4-5). The wealthy and the crippled frequented the place in multitudes to utilize the waters and to take part in the social activities. Baiae became famous not only for its springs but also for its debauchery. Martial was one of many who described its temptations, which lured the virtuous (*Epigrammata* I:62). Josephus

Flavius describes the varied facilities of Baiae when recounting the visit of Caius Caligula: "There are in that place royal palaces, with sumptuous apartments, every emperor still endeavoring to outdo his predecessor's magnificence; the place also affords warm baths, that spring out of the ground of their own accord, which are of advantage for the recovery of the health of those that make use of them, and, besides, they minister to men's luxury also" (*Antiquities* XVIII, 249; Neuburger 1919:71). According to Pliny the Younger, other healing places were more modest (*Epistulae* VIII, 8; Jackson 1990a:7). According to the fourth-century C.E. Greek biographer Eunapius, the hot baths of Hammat Gader were "second only to those at Baiae, with which no other baths can be compared throughout the Roman world" (*Vitae Sophistarum* 459; Sukenik 1935:21; Lieberman 1946:354; Hirschfeld and Solar 1981:202; Dvorjetski 1988:92; Yegül 1992:121).

The classical writers were acquainted with the healing springs of the Land of Israel and Jordan. Pliny the Elder speaks of Tiberias and the town's unique feature, "with its salubrious hot springs." He also mentions the remedial value of the Callirhoe thermal springs in Transjordan, and notes that "the very name alone, Callirhoe, attests to their celebrated and renowned waters." The medicinal hot springs of Pella, Ḥammtha de Peḥal in the talmudic sources, located also in Transjordan, are termed by Pliny "the springs of salvation" (*Naturalis Historia* V:71, 74). Solinus too, in the third century C.E., reiterates that Callirhoe is "a source of good because of its healing warmth, and its name derives from its splendid waters" (*Collectanea Rerum Memorabilium* XXXV:4). People of all kinds bathed at these sites. Josephus Flavius recounts that when King Herod was about to die he went to immerse himself in the Callirhoe springs (*War* I, 656-657; *Antiquities* XVII, 168-171). Yoḥanan of Giscala bathed at the Tiberias hot springs "in order to restore his health that had declined" (Josephus Flavius, *Vita* XVI, 85-86). The Ba'arah hot springs east of the Dead Sea had "a great advantage for every illness, and above all nervous illnesses" (*War* VII, 189). In the fourth century C.E. Ammianus Marcellinus remarked that in the Land of Israel there were many hot springs that were used for medicinal purposes, but he does not give their names (*Res Gestae* XIV:8, 12; Dvorjetski 1996a:39-40; 1996d). Some of the Roman emperors, such as Vespasian, Hadrian and Caracalla, came to the medicinal hot springs in the Land of Israel either for treatment of their maladies or for visiting their legions (Dvorjetski 1996b).

THE RITUAL WORSHIP OF THE THERAPEUTIC SITES

Many hot springs were dedicated to Heracles, and others to Aesculapius, Hygieia, Athene, Apollo, Mercury, Sol, Minerva, Hephaestus, the Three Graces, and the Nymphs (Frazer 1951:209-213; Jackson 1990a:5-9; Dvorjetski 1994b).

The choice of Heracles, the mythological hero, as patron of hot springs, and subsequently of medicinal hot baths, was based on a combination of the elements water and fire, fertility and destruction, which are apparently contradictory but are linked to his life and death. According to the second-century C.E. Greek author Lucianus of Samosata, Heracles refused to make way for Aesculapius. They quarrelled over this and Zeus decided in favor of Aesculapius, who was the senior of the two. "It is only logical, Heracles, that Aesculapius should be placed above you, because he died before you" (*Dialogi Deorum* XV [13] 238).

The hot springs of Thermopylae were among those that were dedicated to Heracles. Strabo explains that the name means hot gates, "because there, near the place, there are hot springs which are dedicated [by the local inhabitants] to Heracles" (*Geographica* IX:4:13). Herodotus described the site in the fifth century B.C.E., emphasizing that an altar to Heracles stood there (*Historiae* VII, 176). His contemporary Aristophanes, in his treatise, Νεφέλαι, "The Clouds," alludes to the tradition of the period by asking rhetorically: "Have you ever seen baths of Heracles that were cold?" (1050-1052). The anonymous author of the notable tenth-century Greek lexicon Suidas deduces from the expression Ἡράκλεια λουτρά that these baths were given to

Heracles as a gift by Hephaestus (Adler 1931:581). In accordance with this expression, it can be assumed that the Greeks usually termed natural hot springs Heracleia (Diodorus Siculus *Bibliotheca Historica* IV:23:1; Leutsch and Schneidewin 1834:174; Frazer 1951:211). Two other sites of medicinal hot springs were consecrated to Heracles. One is in Hierapolis (Pamukkale) southeast of Sardis. It gained wide publicity due to the reputed healing properties of its springs, which are still in use (Strabo, *Geographica* XIII:4:14;Vitruvius, *De Architectura* VII:3:10; Chandler 1776:228-235; Davis 1874:97-112; Kekeç 1989:15-46). The other is the spa of Aedepsus, on the west coast of Euboia Island, in a volcanic region which is subject to frequent earthquakes (*Geographica* I:3:16, 20; Thucydides, *Historiae* III:87, 89; Neumann and Partsch 1885: 321-323). Its hot springs are still used nowadays in the treatment of skin and rheumatic diseases (Frazer 1951:211-212; Fiedler 1840:487-492; Neumann and Partsch 1885:342-344; Krug 1993: 183).

The link between hot springs and the worship of Heracles was not confined to Greece alone. The Greek influence spread to Dacia (Dessau 1902:no. 3891), Italy (Wilmanns 1873:no. 735c; Nissen 1885: 798; Frazer 1951:213) and Sicily (Bädeker 1880: 356-357). An interesting legend has been preserved by the first-century B.C.E. Greek historian Diodorus Siculus about the association of the deeds of the Nymphs with Athene and Heracles, with regard to the springs of Himera in Sicily: "In the region of Himera, where the Nymphs – in order to find favor with Athene – caused the hot water springs to erupt and flow forth vigorously when Heracles visited the island. And the inhabitants dedicated a town and a tract of land, that is called until now Athene" (*Bibliotheca Historica* IV:23:1; V, 3, 4). The Greek poet Pindaros (520-442 B.C.E.) calls Himera "the hot baths of the Nymphs" (Sandys 1961:19). The city's coins bear the figure of Heracles, as a youth or bearded, as well as images of the Nymphs (Ziegler 1929). These baths, which are partially preserved, are known by the modern name *Thermi Imerese* (Frazer 1951:213; Krug 1993:181-182).

Throughout the Roman empire, a deity of local or general repute was combined with the parallel Greco-Roman deity in accordance with its power and influence. Thus, the healing gods of both Gaul and Germany were frequently identified with Apollo the Healer, as in the temples of Essarius near Dijon and Hochscheid near Bernkastel (Hatt 1985:205-238; Dehn 1941:104-111; Krug 1993: 176-177). At Aachen, Apollo was affiliated with the local god Grannus as the central deity of a group of medicinal hot springs (Jackson 1990a:8; Cüppers 1982; Hugot 1963:188-197). An altar found in Aachen possibly depicts the image of Apollo-Grannus sitting on a throne holding a lyre and a plectrum and carrying a quiver of arrows on his right shoulder (Fig. 1). Its inscription indicates that the altar was dedicated "to fulfil a vow" by Latinius



Fig. 1. Altar found in Aachen depicting the image of Apollo-Grannus (H. Nesselhauf and H. Petrikovitz 1967. *BJ* 167: 275, no. 3).

Macer from Verona, who served as *praefectus castrorum* of the Ninth Legion which had come to this place of healing for recuperation (Nesselhauf and Petrikovits 1967:268-279). Another high-ranking visitor to this site could have been Caracalla. Apollo-Grannus was a famous healing deity, and the sick emperor visited sites dedicated to him during his "temple tour" between 211 and 217 C.E., according to the evidence of the historian Cassius Dio (*Historia Romana* LXXVIII, 15:3-7; Engelman 1980:no. 802; Jackson 1990a:8; Krug 1993:175).

One of Baiae's impressive edifices is the Temple of Mercury, a vaulted circular building with high windows that served for illumination and ventilation. The water entered the structure of a nymphaeum. Statues decorated the niches. Nearby are two other bathing complexes: the baths of Sosandra on three levels, and the baths of Venus. The Temple of Venus is a huge vaulted building, reminiscent of the unique vaulted structure in Pergamon dedicated to Aesculapius, which is associated with therapeutic bathing or some similar form of hydrotherapy (Behr 1968:27-28; Ziegenaus 1981:76-100; Yegül 1992:106-108). (Fig. 2).

One of the principal Roman imperial medicinal hot baths in Britain was at Bath, also known as Aquae Sulis. The predominant local deity was Sulis Minerva – a combination of the Celtic Sul or Sulis and Minerva, the Roman goddess of learning and crafts, who had healing powers. Two of the impressive finds from Bath are a gilded bronze head of Minerva from a life-size statue, probably the cult figure itself, and a sculptured cornice which features two winged figures near a gorgon's head – a classical motif which is presented in Celtic style (Richmond and Toynbee 1955:97-105; Cunliffe and Davenport 1985:114-115; Yegül 1992: 117-119). This blend of two entirely different iconographic traditions reflected very well the identity of Minerva and Sulis. Furthermore, the gorgon sculpture has several characteristics which are reminiscent of the deities of sun and water.

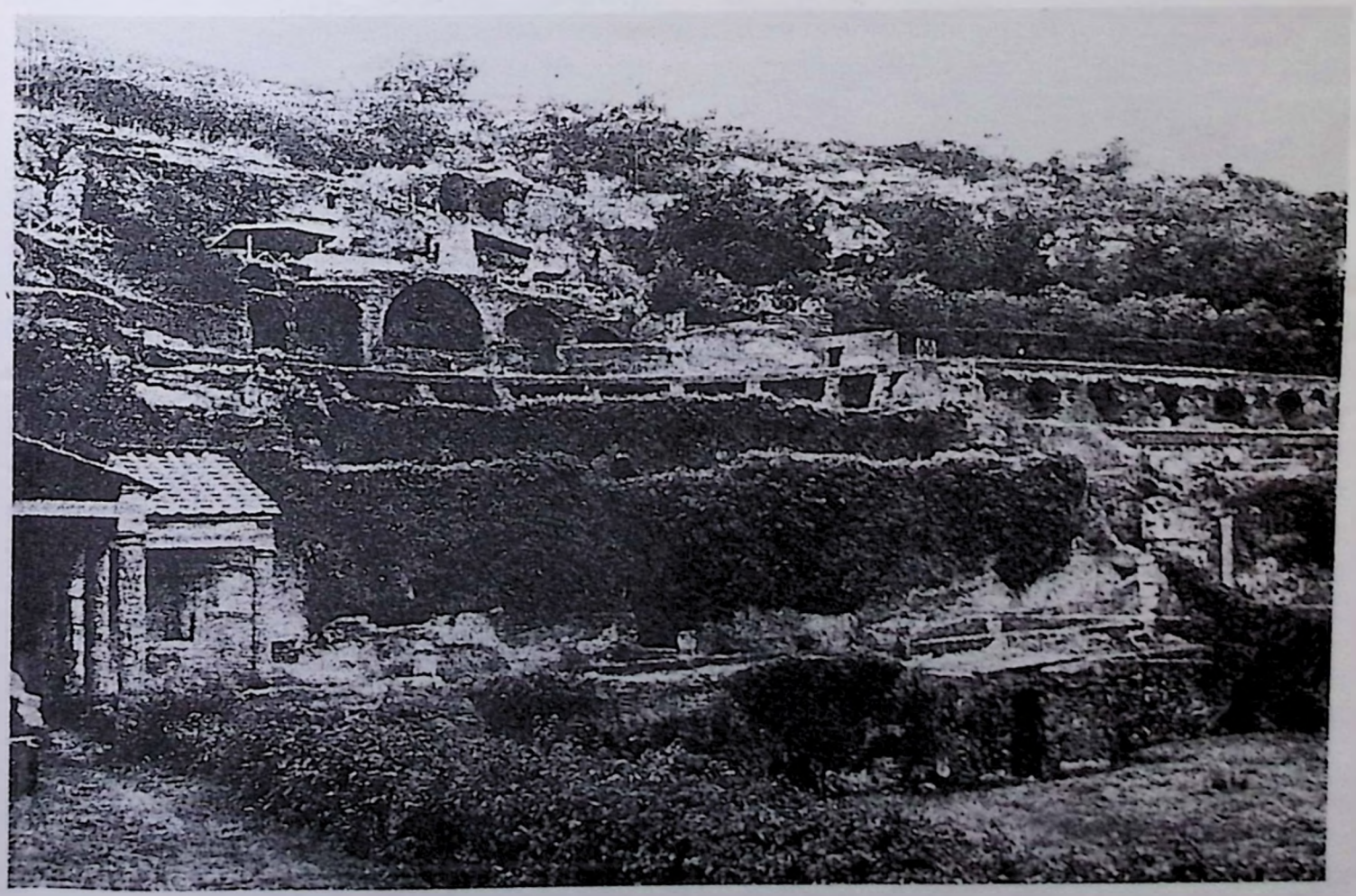


Fig. 2. The baths of Sosandra in Baiae. (Private collection).

Above the monumental opening between the temple *temenos* and the holy spring, the relief on the cornice shows the head of the sun god, Sol, being held by two water nymphs above a rock from which the spring water gushes (Figs. 3, 4).

The three most famous hot springs are located along the Syro-African Rift in the Jordan Valley: Callirhoe, Hammat Tiberias, and Hammat Gader (Jaffé et al. forthcoming). The ritual worship at Callirhoe was of the Nymphs, as suggested by its name (Dechent 1884:198; PW: col. 1669; Dvorjetski 1995; 1996c). Hygieia, daughter of Aesculapius and goddess of health, was the patroness of the Hammat Tiberias medicinal hot springs (Kindler 1961:54; Meshorer 1985:34; Dvorjetski 1990:135-136), and Hammat Gader was dedicated to Heracles and the Three Graces (Meshorer 1985:83; Safrai 1984:158; Dvorjetski 1993:390-397; 1994c:109-111).

THE MILITARY PRESENCE AT THE MEDICINAL SITES AND THE ARCHAEOLOGICAL FINDS

The allocation of considerable military resources to the construction of facilities at medicinal sites was motivated not by public concern, but by the army's self-interest. Sick or wounded soldiers were despatched to these sites, which also served as centers of rest and recreation for healthy soldiers (Collingwood and Wright 1965:nos. 139, 143-144, 146, 147, 152, 156-160; Häbler 1966; Scarborough 1969; Davies 1970:84-104; Webster 1979:248-254; Jackson 1988). The military presence undoubtedly helped to boost the economic prosperity of these medicinal localities, but it also led to repeated clashes between the soldiers and the local population. For example, during the reign of Emperor Gordianus III, in 238 C.E., the villagers of Scaptoparene complained about Roman officers and soldiers who visited very frequently and demanded free lodging and food from the local residents (*CIL* III, no. 12336; Rostovtzeff 1957: 478-479; Alon 1971:186-187). Roman military interference of the Legion X in Hammat Gader is mentioned in the Jerusalem Talmud, 'Eruvin 6, 4, 23c. There is an interesting distinction between the arbitary and "legal" actions of the officials (Lieberman 1936:354; Dvorjetski forthcoming).

A military presence was the key to the development of Aachen, as in many other places of healing in the Roman empire. At the end of the first

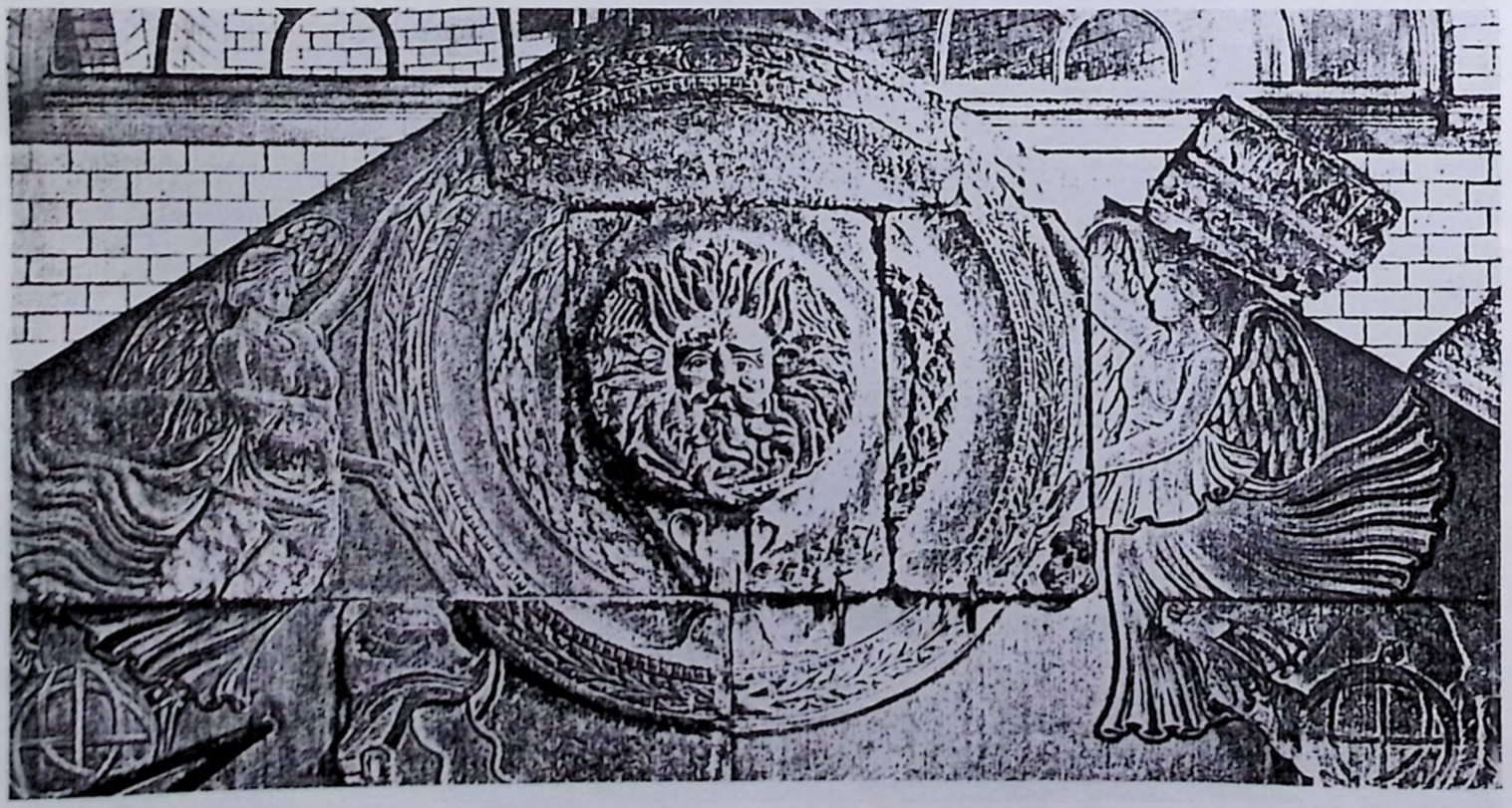


Fig. 3. The front of the Temple of Sulis-Minerva (A. Richmond and J.N.C. Tonybee 1985. *JRS* 45: pl. XXXIX:1).



Fig 4. The Great Bath at Bath (B. Cunliffe 1986. p. 29, no. 19).

century C.E., units of the Legion VI and Legion XXX stationed across the River Rhein at Neuss and Xanten built two bath complexes above the sulfurous hot springs, which were called Buchel-thermae and Münsterthermae. A *temenos* with two Roman-Celtic temples, located within the site of the therapeutic Grannus springs, emphasizes the importance that was attributed to divine influence (Hugot 1963; Cüppers 1982; Jackson 1990a:8).

Military involvement is evident at Aquae Helveticae, the Swiss healing site of Baden, whose god was Mercury (Hartmann 1973:45-51). It served the Roman legionnaires stationed in Vindonissa (Wiedemer 1967:83-93). A building discovered there yielded numerous medical instruments, as well as tiles bearing the seal of the legion. This building has been identified as a military hospital and clinic (Staehelin 1948:487; Unz 1971:41-45). Some of the instruments might have been for cosmetic use, while others included bronze catheters for males, most appropriate in a place for the healing of bladder ailments. These finds indicate that physicians were present at the healing sites (Milne 1907:144-145; Künzl 1986:491-509) (Fig. 5). The excavations at Baden revealed a bath complex built on the slope. A system of conduits conveyed the hot spring water to a series of basins and pools. The arrangement is similar to that at Badenweiler, in the Black Forest (Mylius 1936; Jackson 1990b:5-27; Yegül 1992:119-121; Krug 1993:173-175).

Equally popular were the neighboring health

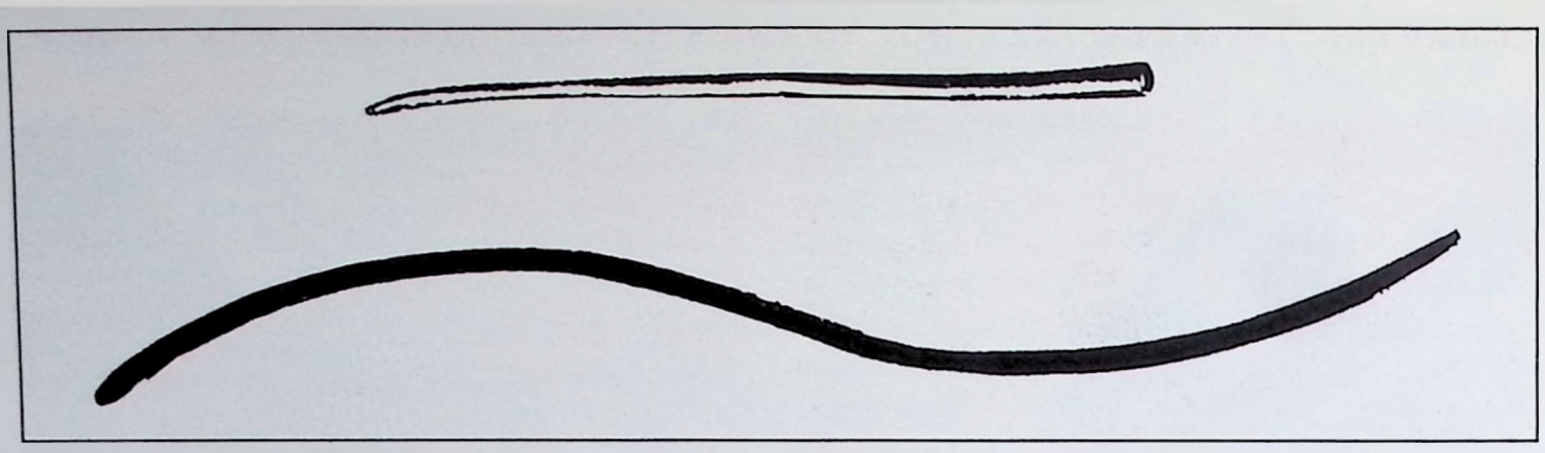


Fig. 5. Catheters from the Museum at Naples (J.S. Milne 1907. pl. XLV).

facilities of Cumae and Puteoli, as were the baths of Naples which, according to Strabo, are "not inferior to those of Baiae" (*Geographica* V:4:7). For a long time, the coast from Naples to Misenum served as the preferred visiting place for Roman emperors and for the wealthy, not only on account of its natural beauty and favorable climate, but mainly because of its medical facilities. Imposing buildings are located to this day on the volcanic slopes of Baiae, including the hot baths' stoas and colonnades (Maiuri 1963:72-86; De Franciscis 1967:212-214; D'Arms 1970:119-120; Borriello and D'Ambrosio 1979:59-73; Yegül 1992:93-110; Krug 1993:182-183).

The striking archaeological discovery in North Africa of glass bottles bearing engraved schematic scenes enables us to envision the magnificent architecture of Baiae and neighboring Puteoli. These bottles were probably manufactured locally in the third-fourth centuries C.E. for sale to visitors who wished to drink the site's healing water (Painter 1975:54-67; Jackson 1990a:7). (Fig. 6).

The spring in Bath was always the dominant component of the bathing complex. Grateful suppliants and others could reach the spring from the temple to bathe, to contemplate the sacred waters, and to throw in their votive offerings or coins in gratitude for the healing bestowed by Sulis-Minerva (Cunliffe 1986:13-43; 1988) (Fig. 7). The ailments from which the people suffered can be surmised from the artifacts that have been found at Aquae Sulis, such as a fragment of a bronze breast and a carved ivory cameo featuring breasts and the vows of those treated. More than 20 Roman vessels with flat handles, made of pewter, copper or bronze, were found in the vicinity of the spring. Six of them bear dedicatory inscriptions to the local gods Sulis or Minerva. This type of pan was used in

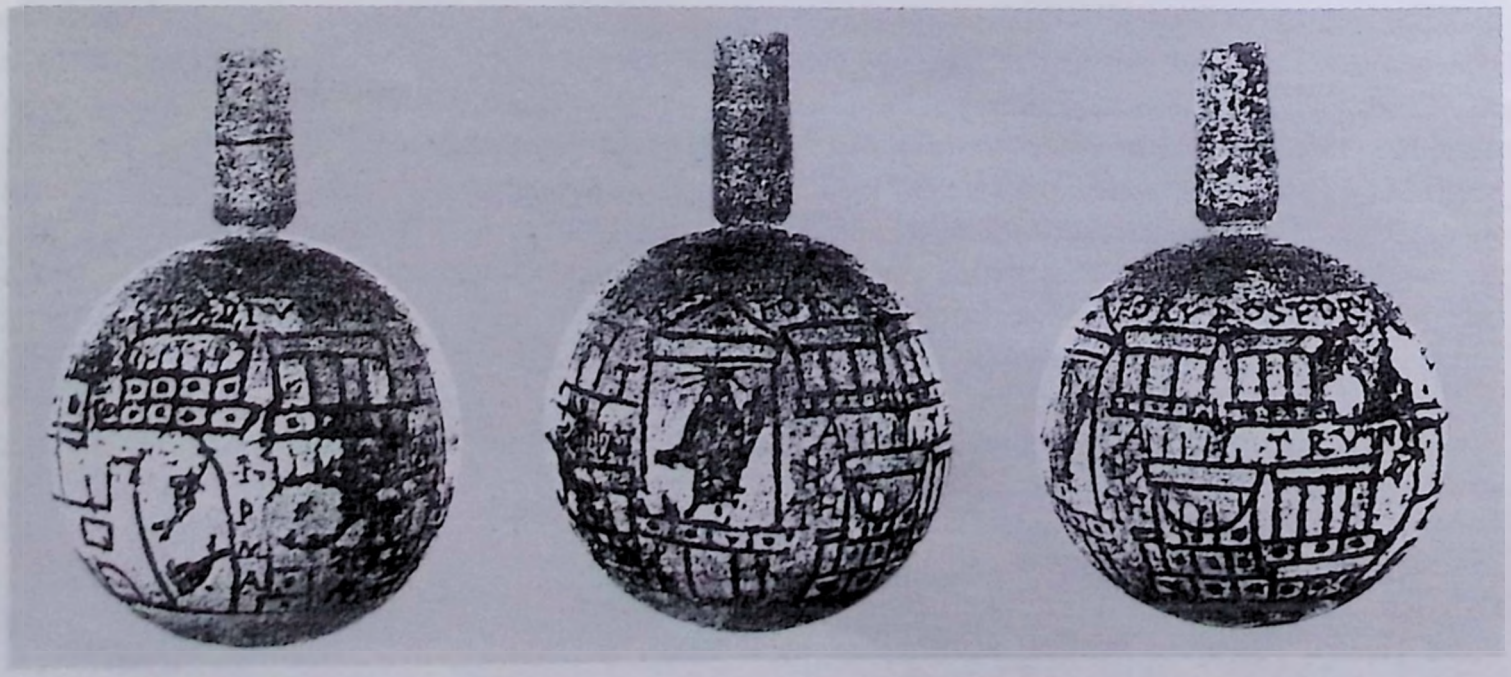


Fig. 6. Glass bottles from North Africa with scenes from Puteoli (K.S. Painter. 1975. 17: 55, no. 1).



Fig. 7. Terracotta votives – a foot, hand, male genitalia, ears, eye and breast – were offered up to healing deities (R. Jackson 1988. p. 158, no. 42).



Fig. 8. Silver and gift patera handle – symbolizing a Roman spa. Chapeaton hoard, second-third century C.E. (R. Jackson 1988. p. 16, no. 44).

cultic ceremonies such as libations and the serving of wine, but could certainly have been utilized at Bath for drinking water as a remedy. Jugs or deep jars have been found at other medicinal sites and temples, such as four from Baden, two of which are dedicated to Mercury "joyfully and willingly in fulfilment of a vow" (Wiedemer 1967: 91-92).

Fascinating artifacts found at other medicinal sites illustrate the nature of hot springs in the classical world. A silver and gilt patera handle from the Capheaton hoard in Northumberland, dating from the third century C.E., shows Minerva presiding, with her foot on an upturned pot from which the sacred spring is gushing, symbolizing her power over the healing waters (Walters 1921: 50-51) (Fig. 8). A scene on the inside of a bowl from Otanes in northern Spain is surrounded by the inscription "Salus Umeritana." Salus was equated by the Romans with Hygieia, the Greek goddess of health. The medicinal site of Umeri in the Pyrenees became famous on account of its waters, which were bottled for despatch to those who were unable to visit the place. The scene within the bowl depicts Salus reclining on top of the medicinal spring, her left hand symbolically directing the water that is flowing from a jug into a container. There is also an old man clad in a toga sitting in a chair and next to him stands a young servant who has brought him water from the spring. Another old man in a toga is seen sacrificing on the altar in gratitude for his cure. Finally, a pair of mules are waiting patiently while a couple of barrels on their cart are being filled with the spring's water by a youth, perhaps a temple servant, carrying an amphora (*CIL*, II, no. 2917; Rostovtzeff 1957:Pl. XXV, 2; Jackson 1990a: 12-13; Krug 1993:180-181) (Fig. 9).



Fig. 9. Silver bowl from Otañes – symbolizing scenes from Salus Umeritana. Second century C.E. (A. Krug 1993. p. 181, no. 83).

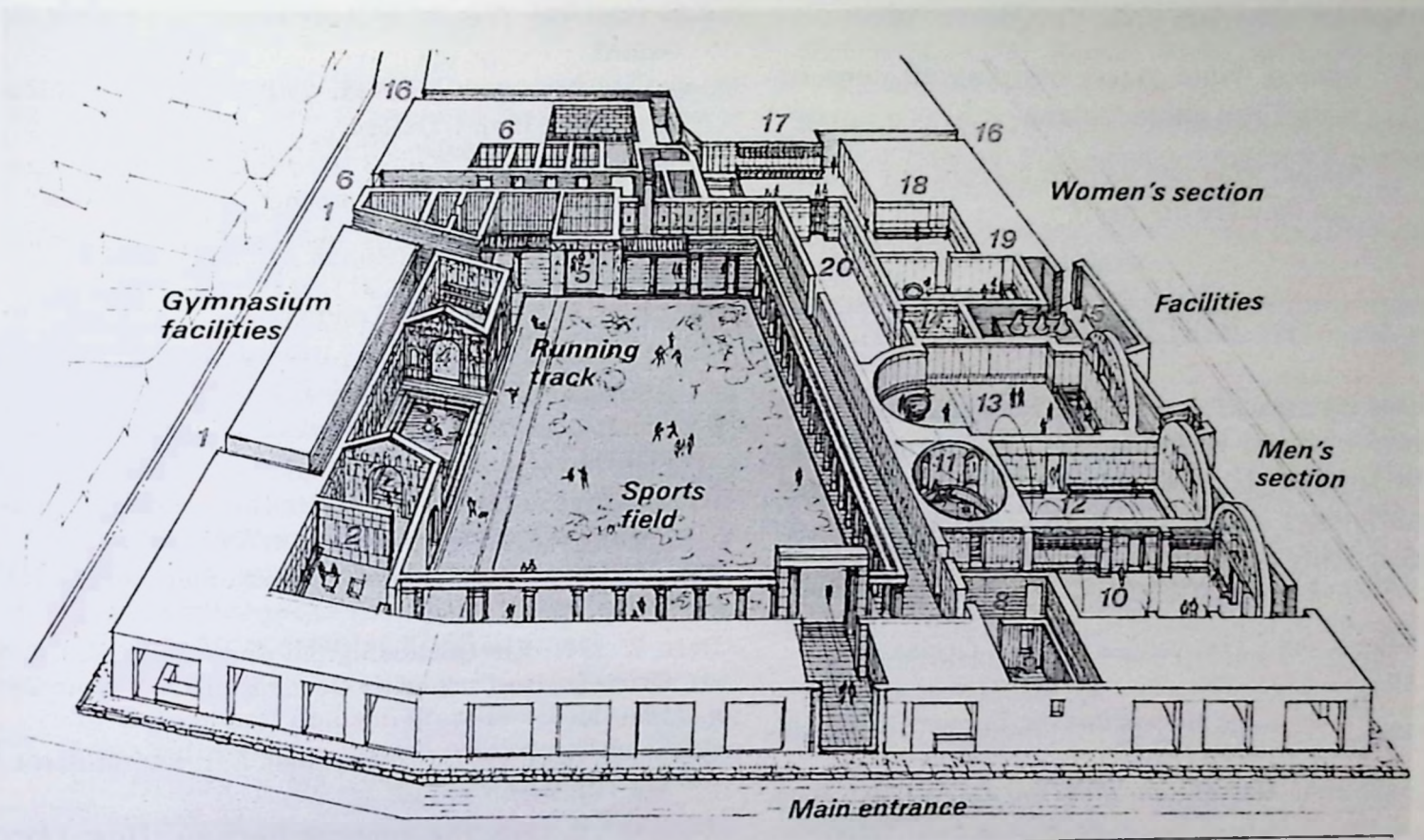
PUBLIC BATHS AND MEDICINAL HOT BATHS: THE ROMAN LEISURE CULTURE

In the Greco-Roman world the properties of various kinds of water were held in great esteem. Hot springs and mineral contents were particularly appreciated. The main remedial sites attracted very large numbers of visitors. Medicinal spring water, like medicinal mud, was applied to painful areas of the body (Pliny, *Naturalis Historia* XXXI:32). Regular bathing and drinking of the water were practised routinely – many internal diseases were treated by drinking the water. In addition, people in antiquity regarded water in general, and that of medicinal baths in particular, as a source of enjoyment (Jackson 1990a:13).

The purpose of the classical Roman public bath installation was to cleanse the body by perspiration and washing, similar to the "Turkish bath" or the sauna in later times. The building included an entrance hall which served as a dressing room (*apodyterium*), from which one could enter a courtyard or exercise hall (*palaestra*), or directly into one of the sweating chambers (*sudatoria*). Sometimes a cold pool (*frigidarium*) preceded the sweating chamber, whose floor was elevated on brick pillars (*suspensurae*) that were 60-90 cm high. Hot air from a furnace (*furnarium*) circulated among the pillars under the floor, and also in the walls, which incorporated square vertical pipes with perforations (*tubulatio*). This "burning from below" is therefore known as the hypocaust heating method. In the more sumptuous baths the floor and walls were lined with marble. From the sweating room, the bather proceeded to the tepid room (*tepidarium*) and thence to the hot room (*caldarium*) which was vaulted and had particularly thick walls, with washing tubs recessed into them. This was followed by a massage, and the exit was through the tepid and cold rooms (Avi-Yonah 1972: 410-411; Gichon 1978:37-38; Henig 1983:59-60; DeLaine 1988; Nielsen 1990; Yegül 1992:30-47, 92-127).

These conventional functional elements, particularly the *caldarium* and the hypocaust, are not found in medicinal hot baths. The latter consisted mainly of pools of hot spring water as well as pools of cold and tepid water conveyed from other nearby springs. The hot bath installations at Hammat Gader near the famous *polis* Gadara, which were renowned throughout the Roman world, constitute a very distinct complex. With its wide lavish halls and spacious pools, it resembles the large *thermae* of the Roman empire and in particular the famous installations at Bath (Tsafrir 1984:110; Dvorjetski 1988:135-136). When the plans of such installations are known, it is possible to reconstruct the bathing procedures and the methods employed by the architects to facilitate them. In Pompey, for example, the rooms are arranged in one line next to the *palaestra*, whereas at Timgad they are arranged in a circle and the first *sudartorium* is connected to the entrance hall and to the cold room. There were baths with twin installations arranged symmetrically. The twin installations not only offered facilities for more numerous bathers but also enabled men and women to bathe separately and simultaneously. Apart from periods of extreme decadence, women usually bathed in separate locations or at special times (Fig. 10). Emperor Hadrian decreed that women should use the baths in the hours of the morning ("until the seventh hour," in Roman nomenclature), while the men should bathe in the afternoon until darkness (Carcopino 1939:293-304; Cowell 1961; Balsdon 1969; Dilke 1975; Dvorjetski 1992:43-45). When men and women did bathe together in the public baths, they were naked (Howell 1980:157-158, 307-308). The custom of joint bathing by men and women, which was prevalent in the first to third centuries C.E., was abolished by Hadrian. The fact that in the following generation Marcus Aurelius again had to forbid the practice, as did Alexander Severus in the third century, testifies both to the prevalence of the phenomenon and the scandals which it engendered (Herr 1970:99-100).

Apart from frequenting the forum and the temples, the Romans liked to spend their time at the baths and at public places of entertainment, which formed the basis of the Roman leisure culture. In place of the former sport education in the Greek gymnasium, and immersion in modest baths, the Romans deliberately promoted bathing.



1. Private entrances. 2. Pool wash basins. 3. Swimming pool. 4. Pool dressing room. 5. Service area. 6. Entrance and single baths. 7. Latrines. 8. Entrance. 9. Waiting room. 10. Dressing room and cloak-room. 11. *Frigidarium*. 12. *Tepidarium*. 13. *Caldarium*. 14. *Laconicum*. 15. Entrance. 16. Entrances. 17. Dressing room. 18. *Tepidarium*. 19. *Caldarium*. 20. Ambulatory.

Fig. 10. Plan of the Stabian Baths, Pompeii. (A.C. Carpiceci 1977. *Pompeii – 2000 Years Ago*. Firenze, p. 60).

They turned it into the dominant, or even the sole, form of body care. The main merits of the baths for the Romans lay in prompt enjoyment and self-indulgence, bordering on exaggeration and vanity, to which was added a modicum of social intercourse (Tsafrir 1984:110).

As all citizens, and not only the wealthy, frequented the baths, the places served also for the display of works of art. Famous statues often adorned the edifices, which were themselves richly decorated. In the adjacent buildings and stoas, lectures and poetry readings took place; and philosophers held their discussions there in the certain knowledge that a large audience would come to listen (Avi-Yonah 1972:411). Such philosophers are well known from the *polis* of Gadara and the baths complex in its suburb, Hammat Gader (Eunapius, *Vitae Sophistarum*, 459; Geiger 1985:3-16).

It should be noted that in the Greek literature and in the writings of the Jewish sages, the projects undertaken by the Roman empire, including its baths, have been subjected to numerous and diverse evaluations – both complimentary and critical (Hahn 1906; Fuchs 1964; Friedlander 1922: 318-320; Herr 1970:95-108). The Romans themselves denigrated their baths (Lucianus, *Nigrinus* 34; Carcopino 1939:293-304; Dunbabin 1989:6-46). They were well aware that beneath the tall stoas there teemed peddlers and pimps, and that many people were frequenting the site in order to gorge, to guzzle and to debauch themselves. The picture that emerges at Hammat Gader serves as a vivid reflection of all these aspects (Dvorjetski 1992: 104-115, 159-169).

The public baths in general and the medicinal baths in particular envolved into meeting places and cultural centers that were symbolic of a whole

way of life. There is much truth in the contemporary aphorism (*CIL*, VI/3, no. 15258):

> *balnea, vina, venus corrumpunt corpora nostra sed vitam faciunt.*
>
> Baths, wine and women corrupt our bodies, but they are life itself.

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I am very grateful to Dr. W.Y. Loebl for his helpful advice, and to Ralph Jackson, the Curator of the Department of Prehistoric and Romano-British Antiquities in the British Museum, for his warm hospitality and useful information.

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SUMMARY AND CONCLUSIONS

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Both the architectural elements and small finds, including epigraphical remains, furnish important information about the baths complex, its mode of operation, and even the social origins of those who visited the site over the many years of its existence. The remains uncovered in the excavation correspond to the descriptions in the literary sources. The structure was found to be an enormous, magnificently built complex. It became clear that the 5,500 m^2 exposed during the excavation are only part, and perhaps even merely a small part, of the complex's entire area. The great splendor of the site is evident in its monumental construction, the use of expensive and varied building materials, and the very meticulous planning and execution of the project. All of these elements correspond to Eunapius' description of Hammat Gader, according to which its hot baths were second only to those of Baia in the Bay of Naples in magnificence; there are no other *thermae* comparable to these.

We learn of the site's sanctity from the many dedicatory inscriptions revealed there which open with the formula: "In this holy place...." This type of find confirms that thermal springs in the Roman world were sanctified; temples were erected next to many of them (Jackson 1990). In the most important inscription found in the excavations – the Eudocia inscription from the fifth century C.E. – two Greek mythological figures are mentioned: Hygeia, patroness of thermal springs, and Galata, nymph of springs and water sources. These figures point to the sanctity of the site and its uniqueness as a bathing resort possessing remedial powers.

Also suggestive of the site's sanctity are the hundreds of clay lamps discovered at the bottom of the pool in Area B that was covered by a late stone floor. Most of these lamps lacked soot marks around their mouths and were thus probably used as offerings. Another concentration of lamps, almost all of which were free of soot marks, was found in the alcove in the western wall (W50) of the southern wing of Area D.

On the other hand, in the course of the excavations, we found no evidence supporting the claim that the baths complex at Hammat Gader was dedicated to the Three Graces and was even named after them. This claim (Dvorjetzki 1992:438) is based on alleged literary evidence in rabbinic literature, on the one hand, and on various finds (such as coins and a silver ring) from Gadara, on which depictions of the Three Graces appear, on the other. However, as mentioned, our excavation finds, including the rich epigraphical material, do not corroborate this view. The southern wall (W5) of Area C indeed has three niches which probably housed statues, but there is no way of knowing which figures from Greek mythology appeared in them. Niches for statues in bathhouses, in particular three arranged symmetrically, are a common phenomenon. An example is to be found in the Bath of Neptune in Ostia, whose main bathing hall – similar to the one in Area C – is decorated by a pair of columns opposite which are three symmetrically arranged niches (Menderscheid 1981:39, Alb. 10).

The many inscriptions found in the excavations, especially those bearing the names of emperors and kings, are indicative of the importance of the Hammat Gader baths. Throughout the Roman empire *thermae* of this type served as a meeting place for people seeking cures, such as Eunapius of Athens or Antoninus of Placentia. These were pilgrimage sites par excellence and hence their renown and notoriety. We can therefore understand why various rulers took pains to have their names recorded in dedicatory inscriptions at such sites in return for direct or indirect support.

The date of the complex's construction and its various phases of development may be determined with a great degree of certainty on the basis of the archaeological artifacts. The Hammat Gader baths

were built in the mid-second century C.E., during the reign of the emperor Antoninus Pius (138-161), whose name is mentioned in the Eudocia inscription. This dating is corroborated by various other finds. It is possible that this emperor contributed toward the construction of the building, either directly or indirectly, and in return part of the complex was named after him.

Among the various corroborative finds are, *inter alia*, a coin of Marcus Aurelius and Lucius Varus (161-169 C.E.) discovered in the original pool of Area E, beneath the late marble floor; two fragments of clay lamps (one beneath the mosaic floor of Area F and the other on the floor of the pool in Area B); and a not insignificant number of potsherds found on the floors of the original pools of Areas C, E, and B.

The style of the marble statues and the decorations adorning architectural elements revealed at the site serve as additional evidence in this context. Comparison of the two statues – that of the lady draped in a tunic and that of the nude male – to parallels in Asia Minor and Cyprus dates them to the second century C.E. Most of the decorated architectural elements of the columned portal in Area C have been dated to this period. Indeed, this portal later underwent renovations, and it appears that it was rebuilt; nevertheless, one can reasonably assume that it was part of the original second-century structure.

The construction of the baths complex at that time corresponds to a broader phenomenon. This period is marked by the construction of *thermae* throughout the empire (Nielsen 1990:59). The closest architectural parallels to the Hammat Gader baths are the large contemporary baths in Asia Minor (Ephesus, Miletus, Sardis, Alexandria, Troy, etc.).

The chronological conclusion regarding the date of construction of the Hammat Gader baths contradicts Dvorjetzki's claim (1993), according to which they were built in the days of Caracalla (211-217). This suggestion, which is based on an analysis of the literary and epigraphic sources, does not accord with the excavation finds, according to which the baths were built some sixty years before Caracalla's reign. Another theory advanced by Dvorjetzki, i.e., that the soldiers of the Tenth Legion "Fretensis" were involved in the building of the baths (ibid., 438), is not substantiated by the evidence from the excavations. Not one of the clay bricks and rooftiles at Hammat Gader bears the seal of this legion, examples of which were found at other sites where its soldiers took an active part in the building operations (e.g., Ramat Rachel, Jerusalem, and elsewhere).

The later chronological phases of the baths also find expression in both the epigraphic material and other finds. The most significant change in the structure's shape apparently took place in the mid-fifth century, i.e., about three hundred years after the baths' construction. Inscription no. 1, which was found incorporated in the marble floor above the pool in Area C, records an earthquake that caused the collapse of many parts of the structure as well as the loss of lives. The inscription, which is dated to the mid-fifth century, recounts explicitly the transformation of Areas C and E into a recreation hall and the laying of a new floor in both of them. In addition to the elimination of the two bathtubs in order to lay the pavement, we should mention the floor covering the pool in Area B.

The finds beneath these floors, including an abundance of coins, lamps, and potsherds, correspond only partially with the epigraphical evidence. Indeed, most of the material predates the mid-fifth century; however, beneath all the mentioned floors, later coins were found, the latest being of the emperor Justin II (565-578 C.E.). Since the latest finds are the ones that date a floor, we may conclude that the floors of these areas were laid only toward the end of the sixth century! This conclusion would appear to contradict the proposed dating based on the inscription (mid-fifth century), but a more careful examination shows that the latest finds for dating the floors were immediately below them, while the earlier finds were in the dirt fills in the lower levels. For example, hundreds of lamps from the fourth to mid-fifth centuries were found on the bottom of the pool of Area B. Thus, it is probable that the late floors underwent a process of renovation and repaving toward the end of the sixth century.

The Byzantine phase of the mid-fifth century was, in all probability, preceded by a phase of destruction and rebuilding in the mid-fourth

century. This phase is discernible only in the architectural seam of the columned portal in Area C and in one of the two Corinthian capitals crowning the columns. Comparison of the style of the two capitals shows that they are not of the same period. The early one, from the second century, is one of the original components of the portal, while the other is later, from the mid-fourth century C.E. Moreover, the crude architectural seam between the portal and pier to the west of it is evidence of the fact that the columned portal was rebuilt after some sort of disaster. We may speculate that the original columned portal that was built as part of the second-century structure was damaged during the earthquake of 363 C.E., which, according to the sources, also struck Hammat Gader (lit., "the hot spring of Gader").

It should be noted that no other remains from this phase of occupation were found; however, in the bathhouse exposed at Gadara renovations following the 363 earthquake were evident (Nielsen, Anderson and Nielsen 1993:137). The Byzantine level in this bathhouse (Phase 3) is the main level of occupation there.

The third phase in the history of the Hammat Gader baths was dated to 661 C.E. on the basis of the Mu'awiya inscription. The date mentioned in the inscription is the year the caliph Mu'awiya, founder of the Umayyad dynasty in Damascus, assumed power. The inscription speaks of the clearing and renewal of the structure's water system. It is to this phase that we attribute water channels that were found in various parts of the complex, including the conduit leading water from the spring (Area G), through Area D, to an unknown destination in Area J, or the pipe running along W7 in Area E, leading to the bathtub in Area B. The latest inscription dating the baths is in Arabic and was found on top of one of the fountains in Area D. This is a dedicatory inscription from 740 C.E. mentioning a group of people who were cured in "these thermal baths." Thus, the baths building remained in use until the end of the Umayyad period. And, indeed, numerous finds from this period, including potsherds, fragments of glass, lamps, and coins, were revealed on the floors.

The end of the building's existence came with the great earthquake of 749 C.E. The finds dating this destruction are unequivocal. Beneath the huge piles of debris consisting of the upper parts of the walls and the ceilings were late finds from the first half of the eighth century C.E. The destruction caused by this earthquake, which is termed the "seventh quake," was almost total.

After the earthquake of the mid-eighth century, the surviving parts of the structure continued to be used for gatherings and shelter for those who came to bathe in the waters of the hot spring. At the beginning of this phase, in the Abbasid-Fatimid period, levelling operations was carried out in various localities (mainly in Areas A and B). At a later stage, these levelled areas were covered by alluvium, upon which only a few remains of construction in the Middle Ages were found.

The following table summarizes the complex's various phases of occupation that were dated on the basis of the excavations' finds:

PHASES OF OCCUPATION AT THE BATHS COMPLEX

Phase	Beginning	End	Dating Find
I	ca. 150	363	Eudocia inscription, other finds
IIa	363	450	One of the two capitals of the columned portal, Area C
IIb	450	661	Building activity following an earthquake mentioned in Inscription no. 1, other finds
III	661	749	Mu'awiya inscription mentioning the cleaning of the baths, other finds
IV	749	?	Minor levels of occupation above the debris and alluvium of the "seventh quake"
V	Middle Ages		Minor levels of occupation, undated

Architecturally, the building exposed in the excavations features a particularly high standard of construction. The walls were built of various types of stone – basalt and varieties of limestone – with a generous use of hard binding materials (mortar) that characterized Roman architecture generally. Large amounts of mortar were cast in the structure in order to ensure the walls' and floors' stability for hundreds of years.

Lightweight tufa was used extensively for the construction of the halls' roofing (vaults, arches, domes, and semidomes). The use of cross vaults and huge domes attests to careful planning and skill in coordinating and executing the work. A variety of materials and construction methods are evident in the building's floors. The walkways around the pools are paved with imported marble slabs. In certain places, floors of *opus sectile* (colorful marble tiles in various geometric patterns) were laid. The bathing pools were paved with slabs of bituminous stone most probably quarried in areas close to the site. Basalt was used to pave the floor of the entrance corridor (Area H), the street on the north, and the conjectured *palaestra*.

The structure's walls were coated with colorful plaster (red and ocher), and in two halls, C and E, remains of colorful wall mosaics were found. These mosaics were built in such a way that they reflected the daylight that penetrated the windows onto the bathers in these halls.

The overall plan of the baths structure is relatively simple and was based on practical considerations – to permit the transit of as many bathers as possible at any given time. For this purpose, many passageways were built between the various halls, making possible the simultaneous movement of visitors along a large number of routes and in several directions.

The careful symmetrical layout within the halls themselves is typical of the Roman style of architecture. The large number of windows made possible a maximum infiltration of daylight and also allowed for good ventilation.

The water supply system was one of the outstanding achievements of the baths' designers. This was a double system feeding both hot and cold water to the pools. The hot-water system operated on the principle of simple gravitational flow, while the cold-water system consisted of an intricate network of lead pipes. The water in the lead pipes issued from the mouths of the fountains that stood on the sides of the pools. No less than twenty-eight fountains flanked the central pool in Area D. One could imagine the great impression made by the sight of water flowing into the pool from the mouths of the many fountains!

Many elements at the Hammat Gader baths are known from other bathhouses, especially those in Asia Minor and North Africa. It appears that the builders of the baths had a broad knowledge of architecture. Moreover, because of the enormous investment in expensive building materials and the unusual scope of construction undertaken, the Hammat Gader baths became one of the most magnificent ever to be built in the Roman empire.

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APPENDIX

Micropaleontological Analyses of Building Stones from the Hot Springs of Hammat Gader

Naomi Porat

The stones used for paving the pools in Hammat Gader had specific hydraulic properties that prevented water seepage. Field observations identified these stones as limestone, chalk and bituminous chalk. The purpose of the following analyses was to determine the geological and geographic source of the pavement and revetment stones. Samples from several pools were collected and micropaleontological analyses were carried out on each of them. Table 1 lists the samples, the pools in which they were found, and their field description.

The samples were crushed and washed with H_2O_2 to oxidize the organic matter. The microfauna was separated using standard procedures, isolating the fraction <63 μm. The microfauna was identified by Prof. Z. Reiss and the age of the rock was determined on that basis. The results are summarized in Table 1.

TABLE 1: List of Samples, Field Description, Geological Age and Formation

#	Sample Location	Rock Type	Geological Age	Formation*
1	hydraulic pavement in large pool (Area A)	bituminous chalk	Senonian-Paleocene	Taqiye
2	wall fragment (Area D)	soft, white, chalky limestone	Eocene	Zor'a
3	("lepro") pavement and revetment (Area B	hard, white chalk	Lower-Middle Eocene	Zor'a
4	pavement (Area D)	bituminous chalk	Senonian-Upper Campanian	Menuha/'En Zetim
5	pavement, north of spring (Area G)	bituminous chalk	Paleocene-Lower Eocene	Taqiye-Zor'a
6	pavement, central pool (Area G)	bituminous-marly chalk	Paleocene	Taqiye

* Formations as named in Israel. The samples are stored in the collection of the Geology Department, The Hebrew University, Jerusalem.

Bender (1974) describes a sequence of bituminous rocks of Maastrichtian-Danian-Lower Paleocene age, found in the Yarmuk-Wadi Sirhan basin. On the geological map (Picard and Golani 1974) rocks of these age outcrop several kilometers southeast of Hammat Gader. These deposits could be the source of samples 1 and 4-6. Rocks of Eocene age outcrop to the south of the Yarmuk River and east of the Jordan River, near their confluence. That area could be the source of samples 2 and 3.

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Bender F. 1974. *The Geology of Jordan. Contributions to the Regional Geology of the Earth.* Berlin. p. 82 (+ map in the German edition of 1968).

Picard Y.L. and Golani A. 1974. *The Geological Map of Israel, North Sheet, 1:250,000.*

INDEX I

THE WALLS

Key: (+) Existing wall
(-) Wall removed

W1 Northern wall of Area A and southern wall of Areas B and E (+)

W2 Southern wall of Area A (+)

W3 Eastern wall of Area A (+)

W4 Western wall of Area A (+)

W5 Northern wall of Area B and southern wall of Area C (+)

W6 Western row of piers of Area C (+)

W7 Eastern row of piers of Area C (+)

W8 Western blocking wall of Area B (+)

W9 Lateral partition wall dividing Area B into two (+)

W10 Eastern wall of Area B (+)

W11 Western wall of round elevating pool of Area G (+)

W12 Eastern wall of round elevating pool of Area G (+)

W13 Western pilaster wall of Area D and eastern wall of Area E (+)

W14 Southern wall of central part of Area D (+)

W15 Northern wall of central part of Area D (+)

W16 Late blocking wall in Area C, between the northern piers of W7 (-)

W17 Blocking wall in passageway between Areas C and F (-)

W18 Late wall in western room of Area B (-)

W19 Late wall in western room of Area B (-)

W20 Wall which later was determined to be a bench in Area B (-)

W21 Late wall in eastern room of Area B (-)

W22 Western wall of Area B (+)

W23 Late wall in western room of Area B (-)

W24 Bench in eastern room of Area B, next to W1 (-)

W25 Bench in eastern room of Area B, next to W9 (-)

W26 Bench in eastern room of Area B, next to W5 (-)

W27 "Wall of Shops" at northern end of Area C (-)

W28 Blocking wall in passageway between Areas C and H (-)

W29 Wall in Area F, parallel to western facade of baths complex (+)

W30 Pool wall in Area F with incorporated stones (+)

W31 Pool wall in Area F, perpendicular to W30 (+)

W32 Wall of round elevating pool in Area G (+)

W33 Wall between the two northern piers of W6 (+)

W34 Late blocking wall, parallel to W33 (-)

W35 Late wall in Area E, perpendicular to W1 (-)

W36 Late wall in Area F, perpendicular to W4 (-)

W37 Late wall in Area F, parallel to western facade (-)

W38 Addition to the engaged pilaster in the southern part of W13 in Area E (-)

W39 Pilaster in Area C, perpendicular to W40 (+)

W40 Northern wall of Area C (+)

W41 Pilaster in Area C, perpendicular to the western end of W40 (+)

W42 Pilaster in Area C, opposite W41 (+)

W43 Pilaster in Area C, perpendicular to the eastern end of W40 (+)

W44 Late wall in Area F (-)

W45 Late wall in Area F (-)

W46 Rows of collapsed voussoirs in Area E (-)

W47 Row of collapsed voussoirs in Area E (-)

W48 Row of collapsed voussoirs in Area E (-)

W49 Late wall in area C, on top of W40 (-)

W50 Eastern wall of Area G (+)

W51 Late wall in Area C, perpendicular to W40 (-)

W52 Late wall in Area C, perpendicular to W40 (-)

W53 Beams covering a channel in Area E (-)

W54 Southern wall of hall in Area G, east of round elevating pool
W55 Late wall in Area G, parallel to W2 (-)
W56 Small wall in Area C, parallel to W40 (+)
W57 Small wall in Area C, perpendicular to W56 (+)
W58 Wall in Area C, between the two southern piers of W6 (+)
W59 Late wall in Area C, between the two central piers of W6 (-)
W60 Wall in Area C, between the two central piers of W6 (+)
W61 Southern wall of original rectangular elevating pool (+)
W62 Wall in Area G, perpendicular to W61 (-)
W63 Late wall in Area C, between the two northern piers of W6 (-)
W64 Late wall in Area G, perpendicular to W2 (-)
W65 "Pier wall" between W11 and W55 (-)
W66 Late wall in Area F, perpendicular to W6 (+)
W67 Late wall in Area F, perpendicular to W66 (+)
W68 Late wall in Area F, perpendicular to W60 and parallel to W66 (+)
W69 Late wall in Area G, perpendicular to W54 (-)
W70 Bench in Area F, beneath W37 (-)
W71 Late wall in Area F, perpendicular to W58 and parallel to W66 (+)
W72 Late wall in Area F, perpendicular to W71 (+)
W73 Eastern wall of southern wing in Area D (+)
W74 Wall in Area F, perpendicular to the western end of W29 (+)
W75 Late wall in Area C, between the two central piers of W6 (-)
W76 Northern wall of the hall in Area G east of the spring (+)
W77 Late wall in Area H (-)
W78 Late wall at northern end of Area F, above the channels (-)
W79 Late wall in Area H, blocking entrance to Area C (-)
W80 Wall delimiting Area E on the north (+)
W81 Late wall in Area H, resting on the street (-)
W82 Wall delimiting Area F on the north, perpendicular to W41 (+)
W83 Late wall in Area H, perpendicular to the eastern doorjamb of the entrance in W90 (-)
W84 Late wall at northern end of Area F, perpendicular to W17 (-)
W85 Wall delimiting Area D on the south (+)
W86 Eastern wall of round elevating pool in Area G (+)
W87 Wall perpendicular to W31 in Area F (-)
W88 Wall in Area F, next to W11 (+)
W89 Combined with W61 in Area G
W90 Northern wall of entrance corridor (+)
W91 Western wall flanking steps descending to entrance into Area H (+)
W92 Eastern wall flanking steps descending to entrance into Area H (+)
W93 Wall in Area H, parallel to W92 and perpendicular to W90 (+)
W94 Southern wall of southern apsidal room in Area D (+)
W95 Wall between the two apsidal rooms in Area D (+)
W96 Western wall of narrow northern wing of Area D (+)
W97 Eastern wall of narrow northern wing of Area D (+)
W98 Combined with W80
W99 Eastern wall of round pool south of W54 in Area G (+)
W100 Eastern alcove wall of Area D (+)
W101 Addition to southern face of W54
W102 Late blocking wall between the two central piers of W7 (-)
W103 Late blocking wall between the southern piers of W7 (-)
W104 Wall in Area F, perpendicular to W74 and parallel to W29 (+)
W105 Wall in Area F, southern continuation of W104 (+)
W106 Wall delimiting Area G on the south (+)
W107 Southern wall of corridor in Area J (+)
W108 Northern wall of corridor in Area J (+)
W109 Wall delimiting Area J on the east, parallel to W73 (+)
W110 Late wall in Area J, perpendicular to W73 (+)
W111 Wall in Area F, perpendicular to W29 and W104 (+)
W112 Wall in Area F, western continuation of W111 (+)

W113 Wall west of mosaic floor in Area F, parallel to W105 (+)

W114 Wall in Area F, parallel to and west of W112 (+)

W115 Wall in Area J, perpendicular to W100 (+)

W116 Late wall in Area C, between the two northern piers (-)

W117 Late wall in Area H, built on top of the street, parallel to W90 (-)

W118 Late wall in Area H, perpendicular to W90 (-)

W119 Late wall in Area H, perpendicular to W90, east of W118 (-)

W120 Southern delimiting wall of street in Area H (-)

W121 Northern delimiting wall of street in Area H (-)

INDEX II

LOCI

Loci of each excavation area appear in numerical order; excavation areas are listed alphabetically.

Area A

100 Late construction unit in the center of the Oval Hall

101 From the surface at the eastern end of the hall to the basalt pavement

102 Excavation in the northeastern alcove from the surface to the late stone pavement

103 Exposure of the bathtub in the southeastern alcove

104 Exposure of the entrance between Areas A and D

105 Bathtub beneath the late pavement of L. 102

106 Center of the Oval Hall, beneath the basalt floor of L. 101

107 Northwestern alcove, from surface

108 Probe at the point of contact between the pool and the steps

109 Probe beneath the floor of the central pool

110 Windowsill in the northwestern alcove

111 West of W4, above the plaster floor of Area F

Area B

200 Western room, from the surface to the late stone floor

201 Western room, beneath the floor of L. 200

202 Corner bathtub in western room

203 Passage to Area A, beneath the floor of L. 201

204 Eastern room, from the surface to the late earthen floor

205 Eastern room, beneath L. 204

206 Combined with L. 207

207 Eastern room, beneath the stone floor of L. 205

208 Southeastern corner of the western room

209 Area E (= L. 500)

210 Moved to Area E (= L. 501)

211 Pool in western room, beneath the pavement of L. 201

212 Moved to Area E (= L. 501)

213 Eastern room, beneath the pavement of L. 207

214 Dismantling of the late bench next to the bathtub of L. 202

215 Continuation of L. 211

216 Moved to Area E (= L. 501)

217 Moved to Area E (= L. 501)

Area C

300 Clearing of debris in the area of the columned portal

302 North of the columned portal, above the basalt floor

303 Combined with L. 302

304 Combined with L. 302

305 Northern bathtub in the western wall of piers (W6)

306 Central part of the hall, above the tiled floor

308 Beneath L. 302 down to the *opus sectile* floor

309 Between the "Wall of Shops" (W27) and the northern wall (W40)

310 Western cell behind W27, beneath the floor

311 Central cell behind W27, above the floor

312 Eastern cell behind W27, above the floor

313 Central pool beneath the floor of L. 306

314 Penetrating the marble floor of L. 311

315 Penetrating the stone pavement of L. 312

316 West of W17 (described as part of Area F)

317 Combined with L. 313

318 As above, along the strip of fieldstones transversing the floor

319 Dismantling of late steps next to stylobate of the columned portal
320 Southern bathtub of W6, above the floor
321 As above, beneath the floor
322 Northern walkway
323 Combined with L. 313
324 Middle bathtub in the western row of W6, above the floor
325 As above, beneath the floor
326 Combined with L. 313
327 Drainage channel north of the columned portal
328 Outlet of the central pool

Area D

403 Southwestern corner of central part of hall
406 Walkway in southern wing (= L. 706)
407 Probe beneath pool floor (= L. 707)
408 Eastern entrance in W73 (= L. 708)
410 Alcove in W50 (= L. 710)
415 Late channel running from Area G (= L. 715)
418 Entrance in W50, to Area G (= L. 718)
419 Semicircular alcove in W13
420 Alcove passageway in W13, between Areas D and A
421 Beneath the floor of L. 420
422 Beneath the Eudocia inscription
423 Bathtub in southernmost alcove in W13 (south of L. 420)
424 Southern end of central part of pool
425 Southernmost alcove in W100
426 Eastern walkway
427 Alcove north of L. 425
428 Southern drainage channel, beneath W100
429 Eastern walkway (combined with L. 426)
430 Western walkway
431 Semicircular alcove in W100
432 Beneath L. 431
433 Alcove north of L. 431
434 Alcove north of the semicircular alcove in W13
435 Alcove north of L. 433
436 Southern end of the southern wing, next to W85
437 Beneath L. 436
438 Dismantling of broken paving stones in central part of pool
439 Northernmost alcove in W13 (north of L. 434)
440 Northern drainage channel beneath W100
441 Alcove in W50, on the floor
442 Northern wing

Area E

500 From the surface to the plaster floor, at southern end of area (= L. 209)
501 Continuation of L. 500 in the center of the area (= L. 212)
502 Beneath the floor of inscriptions in the southeastern corner of the hall (= L. 216)
503 Continuation of L. 502 in the center of the area (= L. 217)
504 Blocked entrance between Areas E and A (W1)
505 Late channel from Area A
506 Above the stone covering of L. 505
508 Northern apsidal room (described as part of Area D)
509 North of L. 508
510 Excavation above the floor of inscriptions (continuation of L. 500 and 501)
511 Dismantling of blocking wall (W103) between the southern piers of W7
512 Dismantling of blocking wall (W102) between the two central piers of W7
513 Bathtub between the two central piers of W7
514 Excavation above the floor of inscriptions at the western end of the hall
515 Passageway linking Areas C and E, between the northern piers of W7
516 Central pool beneath the floor of inscriptions
517 Southern apsidal room above the lime kiln (belongs to Area D)
519 In the area of the entranceway into Area B
520 Dismantling of the late bench next to W7
521 Section of the late channel beneath the stone covering (continuation of L. 505)
522 Probe beneath the floor of inscriptions (continuation of L. 516)
523 Above the floor of inscriptions at the northern end of the area (continuation of L. 510)

524 Removal of the debris above the floor of inscriptions

545 Southern apsidal room beneath L. 517 (belongs to Area D)

Area F

600 Entire area west of the "Wall of Windows" and north of W36

601 Penetration into the northern part of L. 600, to the level of fieldstones

602 Penetration into the northeastern corner of L. 601, to the plaster floor (-173.09), between W66 and W71

603 Southwestern corner of L. 600

604 Beneath the central arch of W4 (belongs to Area A)

605 Excavation above the main drainage channel

606 Penetration beneath the floor of L. 602

607 Exposure of the square bathtub beneath the level of fieldstones in L. 601

608 Vaulted drainage channel running from Area A

609 Apsidal bathtub beneath the level of fieldstones of L. 601

610 Excavation on the eastern side of W29, to the foundation

611 Exposure of the top of W11 west of the round elevating pool (belongs to Area G)

612 Probe pit between the parallel walls W37 and W29

613 Excavation of the main drainage channel opposite the entrance to Area B

614 Probe pit beneath the level of L. 601 (opposite Area B), next to W37

615 Area between W30 and W11

616 Exposure of the southern alcove in W37

617 Probe pit next to the foundation of W29

618 Exposure of the northern alcove in W37

619 Exposure of the steps next to W37

620 Room next to W60, delimited by W66, W67, and W68

621 Drainage channel of Area B, joins channel of L. 613

622 Drainage channel of Area C, joins channel of L. 613

623 Exposure of stone pipe

624 Excavation west of W29, between it, W104 and W105

625 Penetration into the southern courtyard of L. 624

626 Probe pit west of mosaic floor

627 Excavation south of channel "cutting" L. 625

628 Above the mosaic floor delimited by W105 and W113

629 Beneath the floor of L. 627

630 Lower part of L. 626

631 Penetration beneath the plaster floor of L. 625

632 Opening of the channel cutting L. 625

Area G

700 Bathtub north of round elevating pool

701 Between L. 700 and the spring

702 Walkway east of the hot spring pool

703 Southeastern corner of the hall, next to W54

704 Exposure of the oval pool

705 Late water conduit on top of southern walkway

706 Moved to Area D (L. 424 and 440)

707 Moved to Area D (L. 442)

708 Moved to Area D (L. 444)

709 Entrance in W54 leading to the round pool

710 Moved to Area D (L. 441)

711 Pipe and channel leading into Area A

712 Channel in W2 leading into the southeastern alcove of Area A

713 Walkway around the round pool

714 Corridor between the round pool and the spring

715 Moved to Area D (= L. 443)

716 Probe excavation beneath the floor of the oval pool

717 Probe excavation of the oval pool's benches

718 Passageway between Areas D and G

719 Walkway between the oval pool and the hot spring

720 Entrance east of the round pool (in W99)

721 Hall east of the round pool

722 Beneath the plaster floor

723 Entrance between Areas A and G

724 Beneath the two floors of L. 700

725 Beneath the floor of L. 724

726 Round pool

727 Beneath the basalt floor of L. 714
728 Uncovering the width of W61
729 Above the channel east of the round pool
730 Channel east of the round pool

Area H

800 West of W17, described as part of Area F
801 Probe pit north of W40
802 North of L. 801
803 Entrance corridor, above the floor
804 Room next to the street, between W92 and W93
805 Exposure of the "piazza" above the steps leading down to L. 803
806 Continuation of the paved street eastward
809 Channel in the late structure of L. 803

Area J

900 Room south of the corridor, above the basalt floo (-172.50)
901 Entrance between L. 900 and the corridor
902 Corridor from the southern wing of Area D
903 *Palaestra* (?) north of W115
904 Beneath the floor of L. 900
905 Main entrance in W73 leading from Area D to Area J
906 Northern end of pool in L. 900
907 Southern end of pool in L. 900
908 Area in L. 903 between W100 and the late wall
909 Exposure of basalt floor (-172.50) in L. 908
910 Probe pit beneath the floor of L. 903

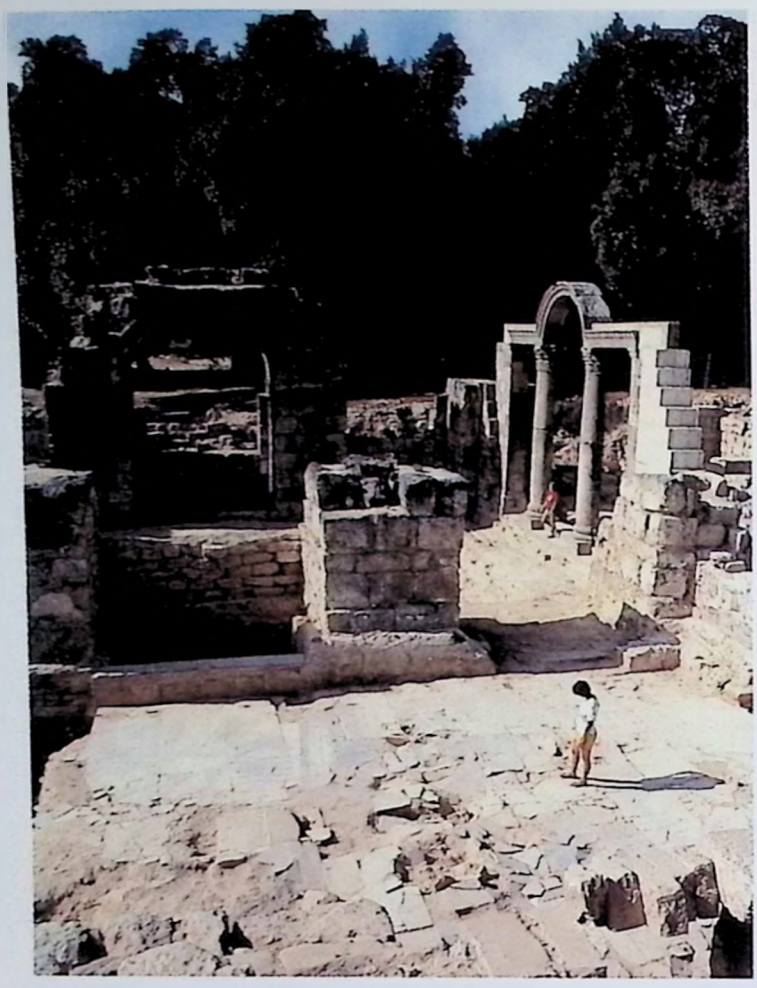


Roman baths at the conclusion of excavations, looking south.

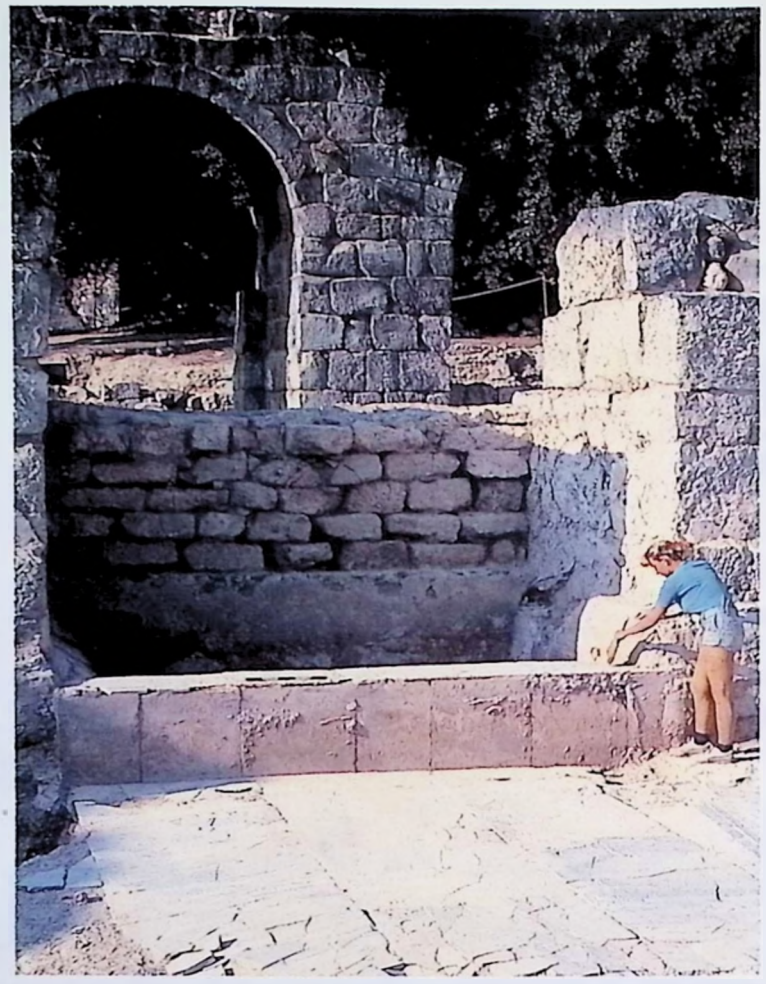


Columned portal in Area C, looking north.

PLATE II



Hall of Inscriptions (Area E), looking west.



Bathtub in Area E, looking west.



Oval Hall (Area A), looking west.

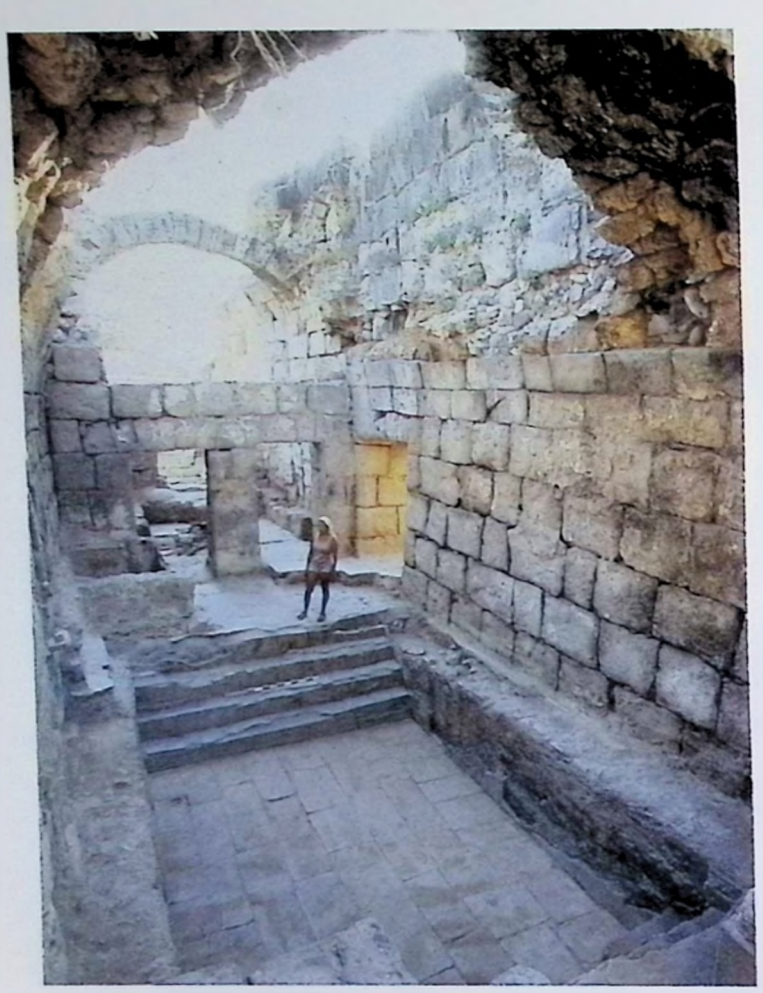


Spring Hall (Area G), looking west.

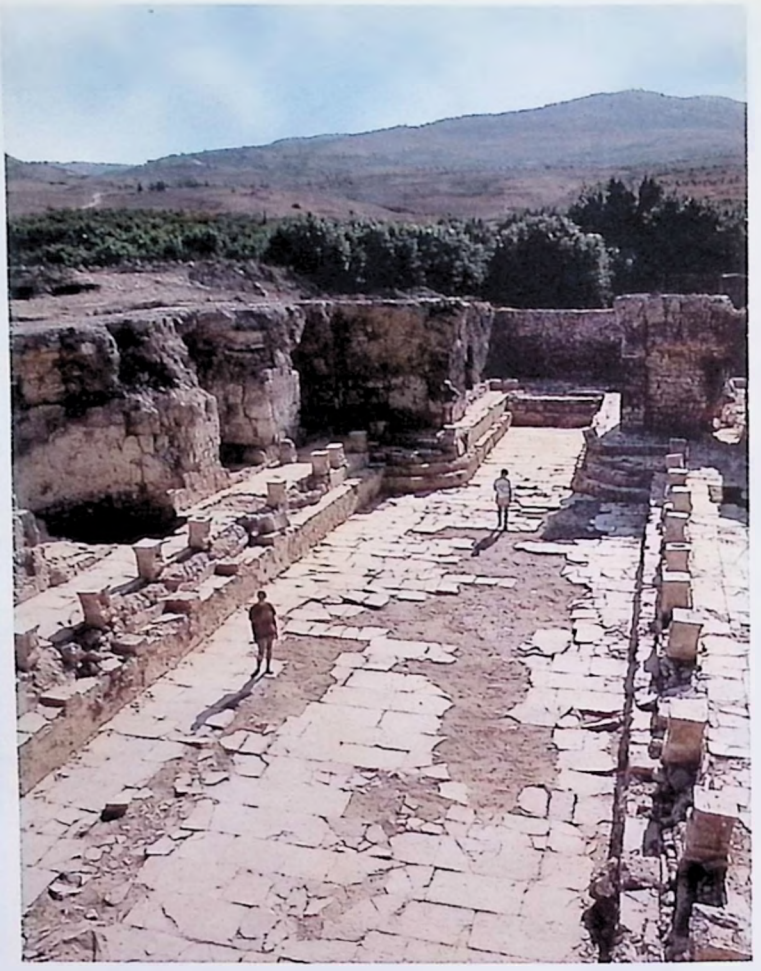


Hot spring, looking north.

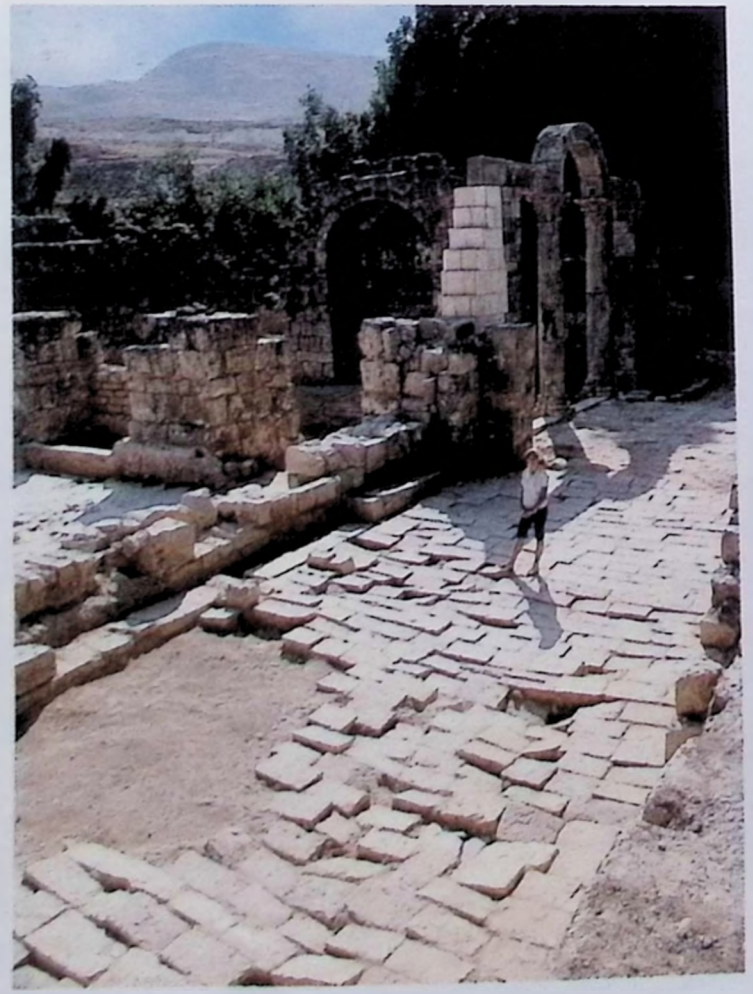
PLATE IV



Passage Rooms (Area B), looking east.



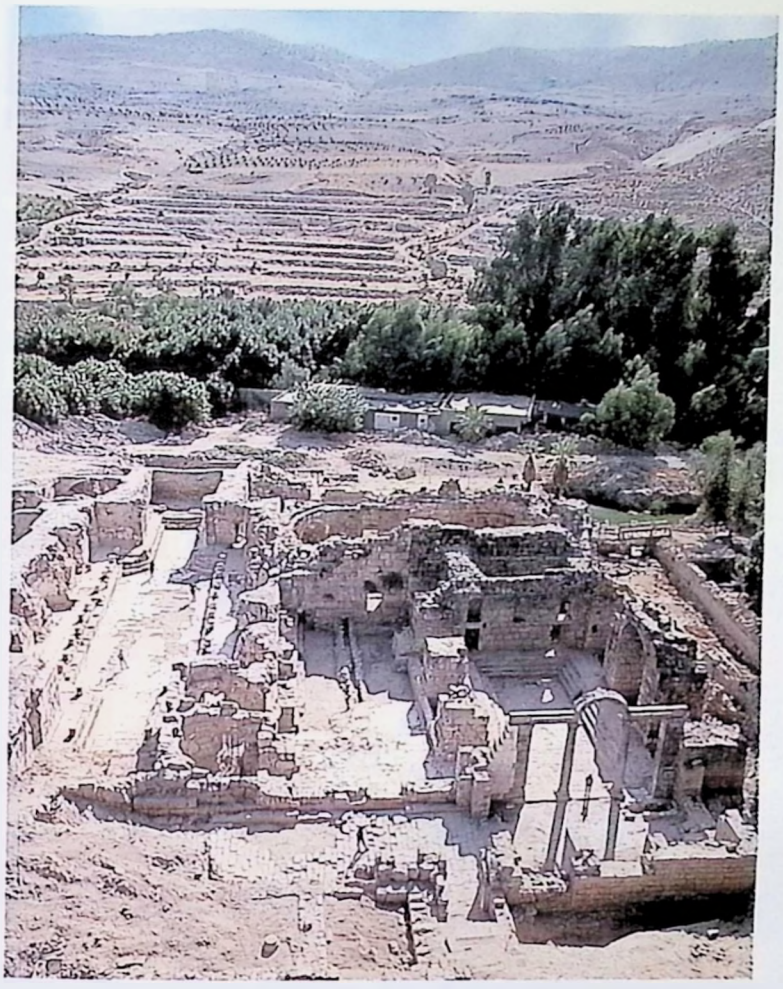
Fountain Hall (Area D), looking south.



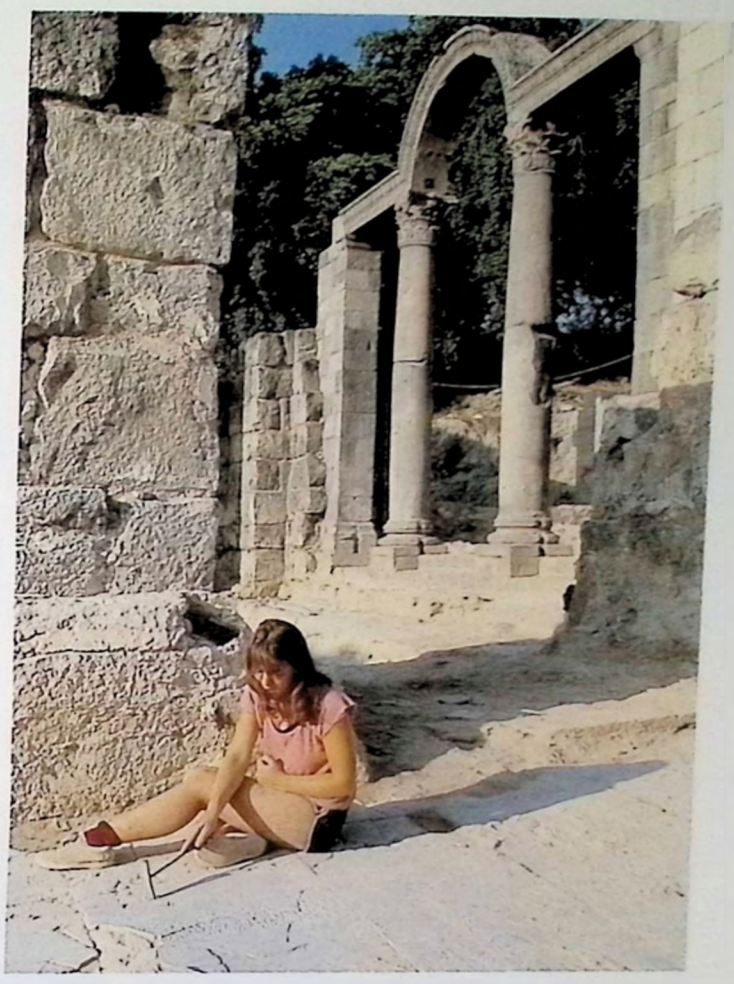
Vestibule (Area H), looking west.



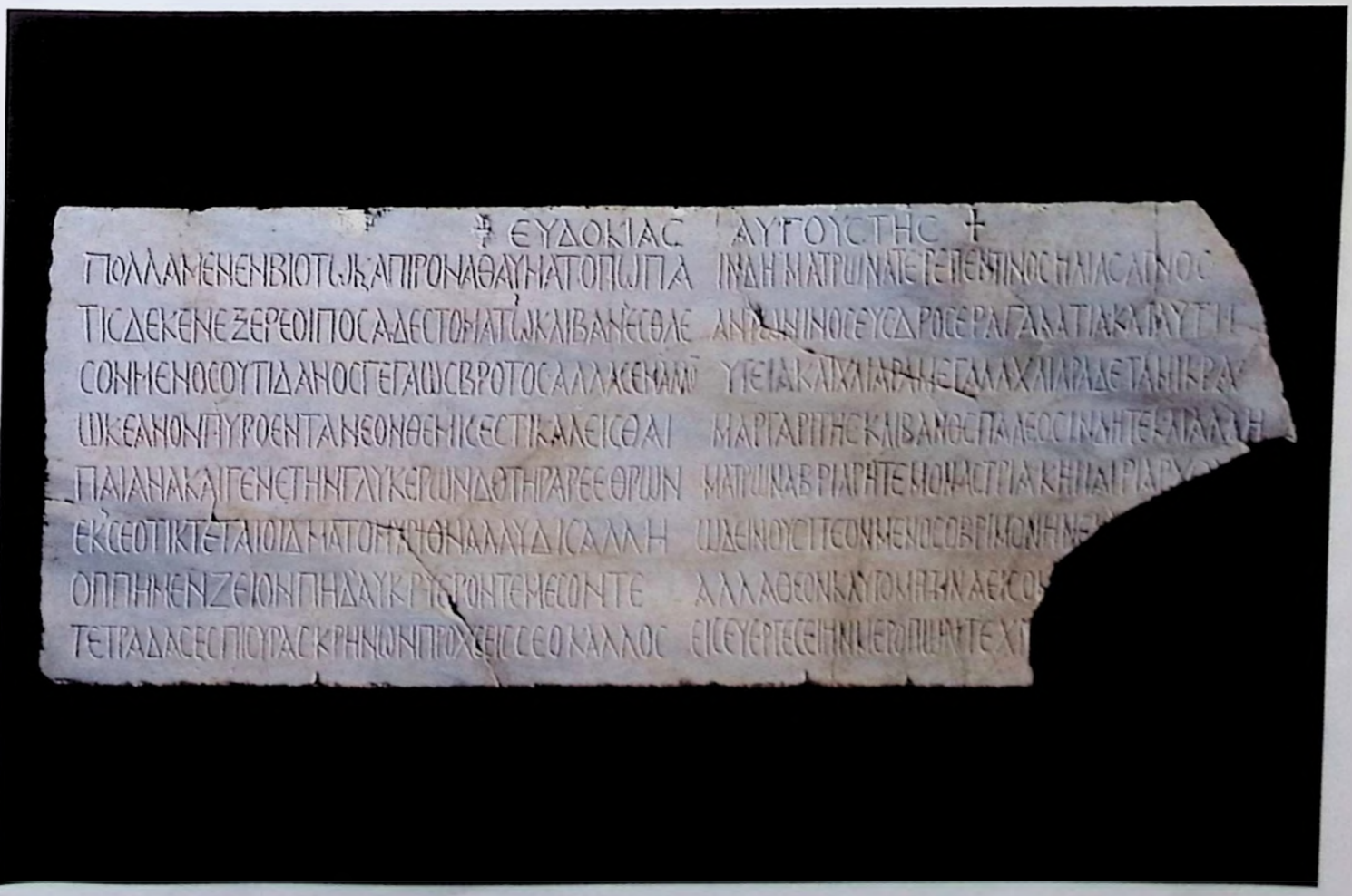
Spring Hall (Area G), looking west.



Marble floor of Area E, looking south.



Inscription in Area E, looking west.



Eudocia Inscription (no. 49).



Marble faces found in Area H.



Fig. 17. Glass vessels found in the baths.



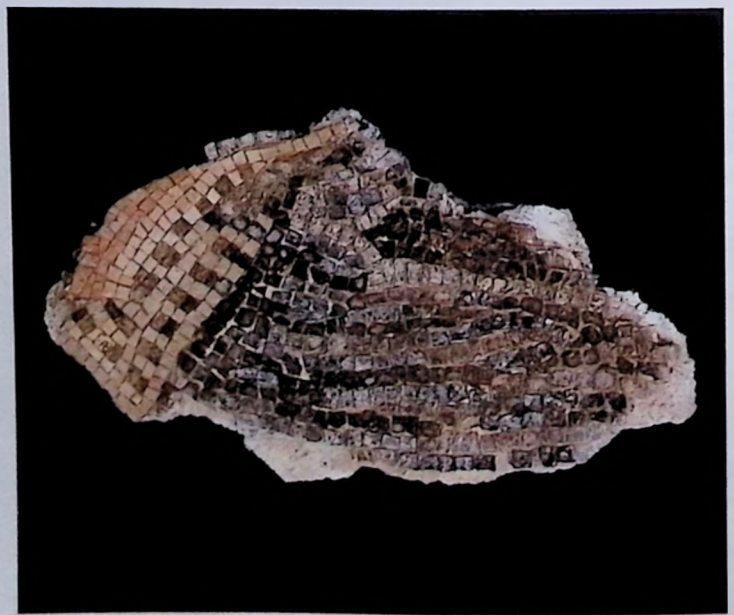
Statue of male found in Area E.



Statue of matron found in Area E.



Fragments of wall mosaic.



Wall mosaic.



Gold earring found in Area B.



Gold jewelry found in Area D.



Oil lamps found in Area D.



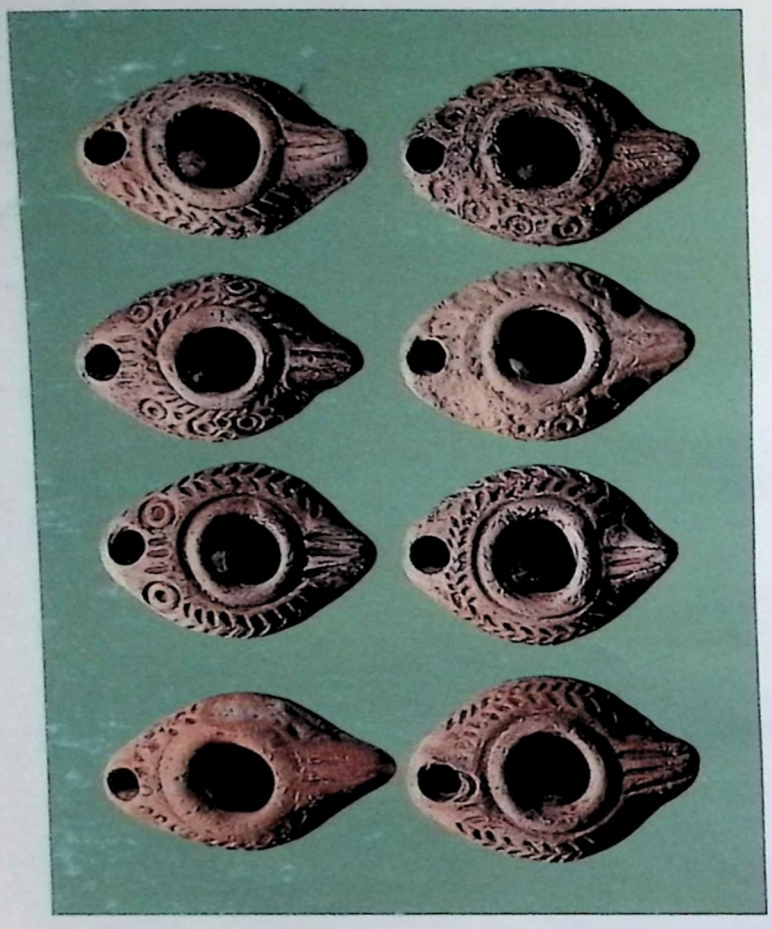
Oil lamps found in Area B.



Spindle whorls.



Glass vases.



Oil lamps.



Late Muslim pottery.



"Grenades" found in Area H.

אוניברסיטת חיפה
הספריה